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A COMPARATIVE STUDY OF THE MATHEMATICAL ABILITIES OF BOYS AND GIRLS

J. H. MINNICK
Horace Mann High School, Teachers College, Columbia University

The assertion is frequently made that mathematics is peculiarly adapted to the minds of boys. We are not infrequently asked to believe that the achievements of girls in this subject are decidedly inferior to those of boys. It was with the intention of testing the truth of these assertions that the following investigation was made. The work of 150 boys and 243 girls was investigated. These students entered the Bloomington (Indiana) High School during the four years beginning September, 1906. The investigation included not only a comparison of the mathematical grades but also a comparison of the relative achievements of the boys and girls in mathematics with their relative achievements in English, history, language, and science, which subjects were required of all students completing the high-school course. Science included botany, physical geography, and physics. The history was not required during the first year and therefore many of the eliminated students did not take up this work. Hence conclusions concerning history may not have the same importance as those concerning other subjects.

Table I gives a comparison of the average grades of boys and girls in the several subjects considered. Any differences of averages

in favor of the girls (i.e., showing an advantage in scholarship) are marked positive and those in favor of the boys are marked negative. (This plan is followed in all the tables in which differences are considered.) The differences in mathematics, English, and science are so small as to be negligible; that is, the boys and

TABLE I

A COMPARISON OF AVERAGE GRADES OF BOYS AND GIRLS

	Mathematics	English	Language	History	Science
Boys	81.3	83.2	80.4	82.3	80.9
Girls	81.0	83.5	82.7	80.3	80.8
Differences	−0.3	+0.3	+2.3	−2.0	−0.1

girls have about the same success in these subjects. If we arrange the subjects according to the degree of success with which the girls rival the boys, we have the following order: Language, English, Science, Mathematics, History. This gives mathematics the fourth place, although there is little or no difference in the rank of the last three subjects.

TABLE II

PERCENTAGE OF FAILING GRADES

	Mathematics	English	Language	History	Science
Boys	17.8	8.3	13.5	12.5	11.8
Girls	16.8	6.6	9.7	10.4	12.5
Differences	+1.0	+1.7	+3.8	+2.1	−0.7

Table II shows the percentage of all grades given in each subject which were failures. (The passing grade in the Bloomington High School is 75.) If we arrange the subjects from highest to lowest according to the differences between boys and girls we get the following order: Language, History, English, Mathematics, Science. Thus, although the girls excel with respect to the point under consideration, when compared with the other subjects mathematics occupies the fourth place from the highest.

From the facts considered thus far it seems that, taking into account the entire student body, the girls are the equals of the

boys although they do not excel to the same degree in mathematics as they do in some of the other subjects, especially in language and English.

We shall now give our attention to those students who have been retarded in any high-school subjects.

TABLE III

PERCENTAGE OF STUDENTS TAKING EACH SUBJECT RETARDED BY THAT SUBJECT

	Mathematics	English	Language	History	Science
Boys	49.3	25.5	41.1	29.5	27.5
Girls	46.5	25.5	29.1	30.5	24.9
Differences	+2.8	00.0	+12.0	−1.0	+2.6

Table III shows the percentage of students taking each subject who have been retarded by that subject. Thus, of all the boys who took mathematics 49.3 per cent were retarded by that subject, i.e., they had at some time failed in mathematics. This table shows that a smaller percentage of girls than of boys is retarded by mathematics. Arranging the subjects according to differences we have the following order: Language, Mathematics, Science, English, History.

Table III deals with the retarded students in relation to the entire student body. The next four tables deal with the retarded students as a separate group.

TABLE IV

AVERAGE GRADES OF STUDENTS RETARDED IN ANY SUBJECT

	Mathematics	English	Language	History	Science
Boys	77.9	77.4	63.7	79.7	78.4
Girls	80.5	80.1	71.1	76.0	77.0
Differences	+2.6	+2.7	+7.4	−3.7	−1.4

Table IV shows that the retarded girls, taken as a group, have done better work in mathematics than have the retarded boys. If we arrange the subjects according to differences we get the following order: Language, English, Mathematics, Science, History. Here

mathematics takes the third place, although the difference between mathematics and English is too small to be of any great importance.

TABLE V

PERCENTAGE OF FAILING GRADES AMONG STUDENTS RETARDED IN ANY SUBJECT

	Mathematics	English	Language	History	Science
Boys	25.5	12.5	20.6	18.4	22.4
Girls	27.3	11.3	16.9	19.0	17.7
Differences	−1.8	+1.2	+3.7	− 0.6	+4.7

If we consider the percentage of failing grades among the retarded students we find that it is greater for the girls than for the boys. Table V shows that of all the mathematical grades given to girls retarded in any subject 27.3 per cent were failures while 25.5 per cent were failures in the case of boys. Table III shows that fewer girls than boys are retarded by mathematics, while Table V indicates that among the retarded students mathematics presents more difficulty to the girls than it does to the boys. Arranging the subjects according to differences we have the following order: Science, Language, English, History, Mathematics.

TABLE VI

PERCENTAGE OF RETARDED STUDENTS RETARDED BY ONE SUBJECT ONLY

	Mathematics	English	Language	History	Science
Boys	8.0	1.3	5.5	2.9	2.2
Girls	9.1	0.4	2.9	2.0	3.1
Differences	−1.1	+0.9	+2.6	+0.9	−0.9

Table VI shows that a larger percentage of girls than of boys was retarded by mathematics and at the same time had a clear record in other subjects. Thus 9.1 per cent of all retarded girls were retarded by mathematics but by no other subject, while 8 per cent of the boys were thus retarded. The order of subjects, according to differences, is as follows: Language, History, English, Science, Mathematics.

Table VII gives the percentage of retarded students not retarded by each subject. Thus, of all the boys retarded by any subject

26.7 per cent had a clear record in mathematics. According to this table a larger percentage of retarded boys than of retarded girls was not retarded by mathematics. Arranged according to differences we have: Language, English, Mathematics, History, Science.

TABLE VII

PERCENTAGE OF RETARDED STUDENTS NOT RETARDED BY EACH SUBJECT

	Mathematics	English	Language	History	Science
Boys	26.7	62.0	38.7	52.8	58.2
Girls	19.5	55.7	50.0	44.9	35.9
Differences	−7.2	−6.3	+11.3	−7.9	−22.3

Summing up our data on retarded students we see that, out of the five points considered, the girls excel in two and the boys in three. Thus on the one hand, a smaller percentage of all girls than of all boys in the high school is retarded by mathematics and the retarded girls have a higher average in mathematics than do the retarded boys, while on the other hand, among the group of retarded students mathematics seems to give more difficulty to the girls than it does to the boys. In the comparative study with other subjects mathematics takes a place somewhat lower than English and language.

We shall now consider the grades of students who, for any reason, have been eliminated from school.

TABLE VIII

AVERAGE GRADE OF ELIMINATED STUDENTS

	Mathematics	English	Language	History	Science
Boys	79.7	80.2	75.8	77.1	78.4
Girls	77.9	81.7	79.0	75.8	76.5
Differences	−1.8	+1.5	+3.2	−1.3	−1.9

Table VIII shows that, in mathematics, the average grade of the eliminated girls is smaller than that of the eliminated boys. If we arrange the subjects according to differences we have the following order: Language, English, History, Mathematics,

Science, giving mathematics the fourth place, although the last three are very nearly the same.

TABLE IX

PERCENTAGE OF FAILING GRADES AMONG THE ELIMINATED STUDENTS

	Mathematics	English	Language	History	Science
Boys	32.6	19.3	28.4	32.2	24.4
Girls	31.9	18.0	21.6	31.2	30.9
Differences	+0.7	+1.3	+6.8	+1.0	−6.5

Table IX gives the percentage of eliminated students taking each subject who failed in that subject. Thus, of the eliminated boys taking mathematics, 32.6 per cent failed in that subject. We see that a smaller percentage of eliminated girls than of boys failed in mathematics, although the difference is very slight. Arranging according to differences we have the following order: Language, English, History, Mathematics, Science.

TABLE X

PERCENTAGE OF ELIMINATED STUDENTS FAILING IN ONE SUBJECT ONLY

	Mathematics	English	Language	History	Science
Boys	6.0	0.0	6.3	6.3	1.8
Girls	7.1	1.0	3.7	1.8	2.4
Differences	−1.1	−1.0	+2.6	+4.5	−0.6

As shown in Table X a larger percentage of eliminated girls than of eliminated boys failed in mathematics and at the same time had a clear record in all other subjects. The order of arrangement is as follows: History, Language, Science, English, Mathematics, giving mathematics the fifth place, although the difference between mathematics and English is so small as to be of no importance.

Table XI gives the percentage of eliminated students taking each subject who did not fail in that subject. Thus of all eliminated boys 38.8 per cent did not fail in mathematics. Fewer eliminated girls than boys had a clear record in mathematics. However, this difference is very small. The arrangement of sub-

jects is as follows: English, History, Language, Science, Mathematics.

We have now considered four points in the case of eliminated students and in only one of these have the girls excelled the boys. We should note, however, that in only one case (Table X) is the difference large enough to be of any significance when compared with the numbers of which they are the differences. In other words

TABLE XI

PERCENTAGE OF ELIMINATED STUDENTS NOT FAILING IN EACH SUBJECT

	Mathematics	English	Language	History	Science
Boys	38.8	43.8	59.1	40.6	58.9
Girls	38.4	57.6	61.7	47.3	59.8
Differences	−0.4	+13.8	+2.6	+6.7	+0.9

mathematics does not seem to be a much stronger element in the elimination of girls than it is in the elimination of boys. A study of the relative achievements of boys and girls in the various subjects reveals the fact that the difference of achievements in mathematics is less than in English and in language.

In all, we have considered eleven points and we shall now try to summarize them.

TABLE XII

SUMMATION OF DIFFERENCES

	Mathematics	English	Language	History	Science
Average grades of boys and girls (Table I)	−0.3	+ 0.3	+ 2.3	−2.0	− 0.1
Failing grades (Table II)	+1.0	+ 1.7	+ 3.8	+2.1	− 0.7
Retardation by subjects (Table III)	+2.8	0.0	+12.0	−1.0	+ 2.6
Retarded-student grades (Table IV)	+2.6	+ 2.7	+ 7.4	−3.7	− 1.4
Retarded-student failures (Table V)	−1.8	+ 1.2	+ 3.7	−0.6	+ 4.7
One-subject retardations (Table VI)	−1.1	+ 0.9	+ 2.6	+0.9	− 0.9
Non-retardations by subjects (Table VII)	−7.2	− 6.3	+11.3	−7.9	−22.3
Eliminated-student grades (Table VIII)	−1.8	+ 1.5	+ 3.2	−1.3	− 1.9
Eliminated-student failures (Table IX)	+0.7	+ 1.3	+ 6.8	+1.0	− 6.5
One subject eliminated-student grades (Table X)	−1.1	− 1.0	+ 2.6	+4.5	− 0.6
Eliminated-student non-failures by subjects (Table XI)	−0.4	+13.8	+ 2.6	+6.7	+ 0.9
Sums	−6.6	16.1	58.3	−1.3	−26.2
Number of positives	4	8	11	5	3

Table XII shows that the sum of all the differences in mathematics is slightly in favor of the boys. Of the eleven points only four were in the girls' favor. However, two of the points against the girls are so small as to have but little importance. This gives the boys but very little advantage over the girls.

TABLE XIII

RANKING ACCORDING TO RESULTS OF TABLE XII

	First Place	Second Place	Third Place	Fourth Place	Fifth Place
Ranking according to sums.....	Language	English	History	Mathematics	Science
Ranking according to number of positives	Language	English	History	Mathematics	Science

Table XIII is drawn from Table XII and gives mathematics the fourth place among the subjects with respect to the girls' ability to rival the boys.

As a further check on this conclusion we have weighted the subjects according to their ranking or order in each of the eleven points considered. Thus, in the case of Table I, the order of the subjects was: Language, English, Science, Mathematics, History, and we have therefore assigned to these subjects the numbers 1, 2, 3, 4, 5, respectively. The eleven numbers thus assigned to each subject were then summed. In interpreting these results, which are given in Table XIV, we must remember that the smaller the sum the higher the rank of the corresponding subject. This table gives mathematics the fifth place instead of the fourth as indicated by Table XIII.

In so far as one is justified in drawing any general conclusions from an investigation of the records of pupils of a single high school, we may conclude that, taking the entire student body into consideration, the boys and girls do about the same grade of work in mathematics. Among the retarded students, mathematics has given slightly more trouble to girls than to boys. Mathematics seems, also, to have been a slightly stronger factor in the elimination of girls than in the elimination of boys. When we compare the relative achievements of the girls with those of the boys we find that the girls have done decidedly better in language and English

than they have in mathematics, history, and science. However, if measured by ability to achieve, mathematics is about as well suited to girls as are history and science.

TABLE XIV

EVALUATION OF SUBJECTS BY ASSIGNED WEIGHTS

	Mathematics	English	Language	History	Science
Table I	4	2	1	5	3
Table II	4	3	1	2	5
Table III	2	4	1	5	3
Table IV	3	2	1	5	4
Table V	5	3	2	4	1
Table VI	5	3	1	2	4
Table VII	3	2	1	4	5
Table VIII	4	2	1	3	5
Table IX	4	2	1	3	5
Table X	5	4	2	1	3
Table XI	5	1	3	2	4
Totals	44	28	15	36	42

It will also be of interest to compare the mathematical work of boys and girls in college. For this purpose the records of 191 students who entered the high school during the years 1903–9 and later pursued studies in Indiana University were considered. The investigation of university records was confined to the first-year mathematics, since the number continuing into higher mathematics was too small to permit of reliable conclusions. Of the 191 students entering the university 123 studied mathematics.

TABLE XV

COMPARISON OF RECORDS OF BOYS AND GIRLS IN UNIVERSITY MATHEMATICS

	Number of Group in University	Number Taking Mathematics	Percentage Taking Mathematics	Average Grade	Mean Deviation	Number of Conditions	Percentage of Conditions	Number of Failures	Percentage of Failures
Boys	69	48	69.6	83.6	9.7	6	12.5	7	14.6
Girls	122	75	61.4	81.9	8.2	2	2.7	5	6.6

Table XV shows that, upon entering the university, 8.2 per cent more boys than girls elect mathematics. The average grade received by the boys is 1.7 per cent greater than that received by the girls. This difference is so small that it has but little significance. Far

more significant is the fact that in the case of the girls the percentages of conditions and failures are decidedly less than in the case of the boys. This with the average grades brings out another important fact. Since the boys' average is somewhat higher than the girls', and since at the same time they have a higher percentage of failures, they must have had some high grades to offset the failures. That is, the boys were not so closely grouped about their average as were the girls. This fact is shown also by the mean deviation.

In order to interpret Table XV more fully we should know from what class of high-school students these boys and girls came. For this purpose all students having completed their high-school mathematics during the given period were divided, according to their high-school grades, into three classes, namely, lowest, middle, highest. Table XVI shows the distribution, among these three classes, of the 123 students who took mathematics in the university.

TABLE XVI

DIVISION OF UNIVERSITY STUDENTS ACCORDING TO HIGH-SCHOOL GRADES IN MATHEMATICS

	Lowest Class		Middle Class		Highest Class	
	Number	Percentage of All Those Taking Mathematics	Number	Percentage of All Those Taking Mathematics	Number	Percentage of All Those Taking Mathematics
Both boys and girls	22	17.9	40	32.5	61	49.6
Boys	9	18.75	16	33.33	23	47.9
Girls	13	17.33	24	32.00	38	50.66

Table XVI shows that almost half of the students taking mathematics at the university come from the highest class of high-school students. Also the percentage of girls coming from the highest class is slightly greater than that of the boys, while the percentage of the boys coming from each of the lower classes is slightly larger than that of the girls. This condition tends to increase the importance of the variation of the boys' and girls' university grades as shown in Table XV. However, too much importance must not be attached to this, for the variations of percentages in Table XVI are small.

To determine the movement of the students within the group taking university mathematics, the 123 students were divided into three groups, first according to their high-school grades and second according to their university grades. Tables XVII and XVIII give the results of these divisions. (It is to be noted that Table XVII differs from Table XVI in that the former is a division of the students taking university mathematics on the basis of their high-school grades in mathematics while the latter is based on the division of *all* high-school students who completed their high-school mathematics during the period under consideration.) These two tables

TABLE XVII

DIVISIONS OF THE 123 STUDENTS ACCORDING TO HIGH-SCHOOL GRADES

	LOWEST CLASS		MIDDLE CLASS		HIGHEST CLASS	
	Number	Percentage of All Those Taking Mathematics	Number	Percentage of All Those Taking Mathematics	Number	Percentage of All Those Taking Mathematics
Boys	18	37.5	18	37.5	12	25.0
Girls	23	30.7	23	30.7	29	38.7

indicate that some of the boys have moved from the lower classes into the highest class, while among the girls there has been a movement from the highest class to the lower classes. This does not mean that the boys have increased their grades over what they were

TABLE XVIII

DIVISION OF THE 123 STUDENTS ACCORDING TO UNIVERSITY GRADES

	LOWEST CLASS		MIDDLE CLASS		HIGHEST CLASS	
	Number	Percentage of All Those Taking Mathematics	Number	Percentage of All Those Taking Mathematics	Number	Percentage of All Those Taking Mathematics
Boys	16	33.3	15	31.3	17	35.4
Girls	28	37.3	24	32.0	23	30.7

in the high school. The fact is that both boys and girls, upon entering the university, let their grades fall, but the decrease has been slightly greater in the case of the girls. Table XIX brings out this fact. The numbers under the heading "Total Amount of

Increase" were obtained in the following manner: The high-school grades of the students who increased their grades upon entering the university were subtracted from their university grades and the

TABLE XIX

COMPARISON OF HIGH-SCHOOL GRADES WITH UNIVERSITY GRADES

	Number of Students Increasing Grades	Percentage of Students Increasing Grades	Number of Students Decreasing Grades	Percentage of Students Decreasing Grades	Total Amount of Increase	Total Amount of Decrease	Difference between Total Increase and Total Decrease	Average Decrease
Boys...	16	33⅓	32	66⅔	64	283	219	4.5
Girls...	21	28	54	72	62	480	418	5.6

sum of these differences gave the numbers in question. The numbers under the "Total Amount of Decrease" were found in a similar way. In the case of both boys and girls there was, in general, a decrease in the grades. However, a larger percentage of girls let their grades decrease and their average decrease was slightly larger than that of the boys.

Thus the consideration of the university records of these students indicates that while smaller percentages of girls are conditioned and failed, the girls as a group do not maintain their standing in the university quite as well as do the boys.

AN EVALUATION OF METHODS FOR PROVIDING FREE HIGH-SCHOOL TUITION

JULIAN E. BUTTERWORTH
University of Wyoming

The growing importance of secondary education in this country makes the problem of providing free high-school privileges for those pupils living in school units not maintaining standard high schools an exceedingly important one. An analysis and comparison of existing free tuition laws and their results ought to be suggestive to those states that are facing this problem.

The basis that has been adopted in this paper for classifying these laws is one in which provision for such privileges free of all charges to the pupils is considered to be of first importance, but one in which the equalization between the local unit and the state of the burden for this purpose is at the same time possible and desirable. The implications of this basis will become clear as the analysis proceeds.

The classification is as follows:

I. Tuition paid wholly or in part by the pupil.
   A. The pupil must pay all.
   B. High-school privileges extended by the establishment of union district, township, union township, or county high schools.
   C. The district (or other local unit) *may* pay the tuition.
   D. The pupil pays part because the law limits the amount of the tuition fee or the conditions under which it may be paid.
II. Tuition entirely free.
   A. The district (or other local unit) pays all.
   B. Provided by the state through free tuition in state-aided high schools.
   C. The state and the local unit co-operate in paying all.

This classification does not prevent all overlapping of laws but does so sufficiently to enable us to make a comparison of the educational principles involved.

Payment entirely by the pupil.—Fifteen states have no free high-school tuition law. While it is true that in some of these states a large number of eighth-grade graduates do attend high schools in

other districts, it is safe to say that the percentage of pupils doing so is smaller than would be the case were the tuition free. Statistics from Connecticut show what such laws may do. The law in that state was passed in 1897. During the school year 1896–97, 419 non-resident pupils attended high schools; during 1897–98, the first year of the free tuition law, the number was 593, an increase of 41.5 per cent. However, of the 593 only 136 fulfilled the conditions of the law for receiving state aid for tuition. From 1897–98 to 1911–12, the number of towns paying the high-school tuition increased from 32 to 88. In 1911–12, the number attending non-local high schools was 11 per cent of the whole high-school registration. These results were secured in spite of the fact that the law was not mandatory.

Establishment of union high schools.—Of the 15 states having no high-school tuition law, most secure some extension of high-school privileges through the establishment of union district, township, union township, or county high schools. It is impossible to state definitely just how important these union schools are as a factor in extending high-school privileges. The following data are, however, suggestive. In Alabama in 1911–12, there were 51 county high schools. In Colorado in 1911–12, 13 of the 64 accredited high schools were county schools. In Maryland in 1911–12, there were 58 high schools in 23 counties. All public high schools are county high schools. Six of these counties have no high school of the first grade; three have no high school of either first or second grade. In Mississippi there are 40 county agricultural high schools. In Montana in 1911–12, 15 of the 34 high schools were county schools with 1,730 of the 4,252 pupils. In Tennessee in 1911–12, there were 111 county high schools in 46 of the 96 counties. There were 7,546 pupils enrolled. In 1914, New Mexico had county high schools in 14 of the 26 counties.

Union high schools may do much in certain states, but they do not by any means solve the problem of free high-school privileges. There is still needed some law providing free tuition for those pupils who cannot attend a union high school.

Permissive tuition laws.—A few states provide that free tuition *may* be granted. This is the case in Connecticut where the state

will, when certain conditions are fulfilled, reimburse the town to the extent of two-thirds of the tuition paid but not more than $30 per year for any one pupil. In 1911–12, there were only 7 towns that did not maintain high schools or pay the tuition in other high schools. The Barnes law of Kansas, passed in 1909, provides that counties in which there are no county high schools may vote a county tax for the support of all high schools in the state that maintain a standard course of study and admit pupils free. In 1911, 37 counties had such a tax. Besides the Barnes law there are several statutes dealing with the tuition problem. There is provision whereby free high-school privileges may be secured through the establishment of township and county high schools. In 1911, 24 of the 105 counties besides those having the Barnes law had county high schools. Provision is also made whereby any school district not in a county high-school district may levy a tax for free tuition. The North Carolina high-school law of 1907 provided that the county board of education might make an agreement with the trustees of a public high school in the county for free instruction. If there is an average attendance at this high school of at least 10 pupils from outside the local district, the high school is entitled to aid on the same basis as the regular state-aided high schools. In 1909, Oregon passed a law permitting counties to levy a tax for the maintenance of high schools providing free tuition for all pupils in the county. In 1911–12, 8 counties had levied such a tax. There were also 6 county high schools. In New York, city and union district high schools receive from the state $20 for each non-resident pupil given free instruction. For cities whose customary charge is larger than this sum a special provision grants that the city "may charge the difference between the sum regularly apportioned by the state and the city's or district's customary charge for the tuition of non-resident pupils, provided the balance of such customary charge shall have been legally assumed and provided for by the school district in which such pupils are resident. Such excess charge should be assumed by a resolution duly adopted at a district meeting in such school district." In West Virginia there is no specific high-school tuition law, but State Superintendent Shawkey says that "Section 66 is so worded as to make this permissive, and we have

advised boards to pay the tuition of high-school pupils whenever their funds are sufficient. Many boards have been quick to take advantage of this section and are paying the tuition of all pupils who desire to attend high schools in other districts."

Permissive tuition laws are, of course, suggestive of what ought to be done, but whether such laws are effective will depend upon the educational sentiment of the people. In Connecticut, at least, the permissive law seems now to have almost as much effect as if it were compulsory, but it must be admitted that permissive laws are too likely to have little practical influence. On the other hand, it must be remembered that a compulsory law is worth little unless a large proportion of the people believe in it. The general tendency in the states now is to make tuition laws compulsory.

Partially free tuition.—There are four forms of this method.

1. Provision for free tuition only in certain districts. Such is the case in Idaho. According to the commissioner of education, the law refers only to regular districts and not to independent, consolidated, and rural high-school districts. It is likely that these other districts usually have high schools, but there are many that do not have standard complete high schools. The tuition law provides that properly prepared high-school pupils are eligible to attend any high school within the county without paying tuition, and that compensation will be made to the high school attended by the action of the county superintendent in transferring to the high school from the home district of the pupil "a sum of money bearing the same proportion to the amount of money received by the district during the year as said pupil or pupils bear to the total school census of the district in which such pupil or pupils belong." The money referred to is that received from outside sources—state and county apportionment. One element of this law is the county limitation; the law provides for payment only in the county where the pupil lives. If there is no complete high school, the privileges are not as adequate as they should be. A second matter of interest is the provision for compensating the high school attended. There are no available data in regard to high-school costs, but according to the *Eleventh Biennial Report of the Superintendent of Public*

Instruction the per-pupil cost of all public schools was, in 1912, $37.99. In the same year the state and county apportionment amounted to about $22 for each pupil in average daily attendance. If the last-named sum is even approximately representative of the compensation per pupil to be made for free high-school privileges, the high schools attended may not be fully compensated. In this connection it should be remembered that a high school may accommodate a small number of non-resident pupils at little or no additional expense. It seems that there is much dissatisfaction with the law in Idaho both because some parents must pay tuition and because what the high-school districts receive does not compensate them for the instruction given. On the other hand there are many districts that make no attempt to collect tuition even when the law permits it.

2. A second form of partially free tuition is that providing only for the payment up to a certain rate or amount by some school unit. In some communities this rate or amount permits the payment of all the tuition; in many communities it does not. In South Dakota, the district is required to pay the tuition up to $2 per month, while any amount in excess of this must be paid by the pupil. The tuition charge may not exceed the per-capita cost of maintaining the school. Michigan limits the amount the district must pay to $20 per pupil unless the district votes to increase this. Maine provides that the town shall pay the tuition up to $30 per pupil and that two-thirds of this, not exceeding $500, shall be refunded by the state. In Delaware, the State Board of Education is required to select certain graded schools which may be attended by pupils of school age living in districts not maintaining graded schools. For this attendance the state is to pay 20 cents per pupil per day. The city of Wilmington is not held to this requirement, and if it does admit non-residents, it may charge what it thinks proper. If the city does admit outside pupils, it may receive the regular sum from the state and this sum is to be deducted from the charge made the pupil. Vermont requires a town to maintain a first-class high school or to furnish tuition up to $24 per year. Upon vote of the town a higher rate may be paid. The

state then refunds a certain percentage of the tuition, depending upon the amount expended for school purposes. The New Hampshire law requires towns not maintaining high schools to provide tuition up to $40 per pupil per year. Inasmuch as some schools charge more than this, tuition is not always free. The state refunds a certain percentage of the tuition on the basis of the tax rate levied. The details will be found in another part of this paper. The Vermont and New Hampshire laws are illustrations of the serious efforts now being made by several states to base the distribution of their school funds upon the needs of the various communities. Later reference will be made to this aspect of the free tuition problem.

3. A third form of law providing partially free tuition is that requiring the payment of the tuition except when the district is unable to maintain its school properly. In Nebraska, the district pays 75 cents per week to the high school attended unless the district is unable to maintain a school for nine months after levying the maximum tax rate of 35 mills. Arkansas provides that pupils in counties having no high schools may attend one in another county at the rate of $1.50 per month. The home district pays this unless it is unable to maintain a common school for six months. In Ohio, districts maintaining a second- or a third-grade high school are not required to pay the tuition if the district is levying the maximum rate and all funds are needed for the support of its schools. Other districts or local units must pay the tuition. The rate may not exceed the per-capita cost of such schooling.

4. A fourth form is found in South Carolina where the law provides that a pupil may attend any state-aided high school in the county. In Arkansas, the same arrangement is made. In 1911–12, there were three counties in this state without such schools.

In general, laws such as these are better than those that have been considered thus far, in that the high-school privileges are likely to be more certain than under permissive tuition laws, and more extensive in actual influence than where they are dependent upon the establishment of union high schools. The chief weakness of this type of law is that it provides only partially free tuition. In some of the states the burden upon the pupil is not likely to be

very heavy. This seems to be the case particularly in Delaware, New Hampshire, and Vermont. The co-operation of the state and the local unit, evidenced by the state-aid provisions cited in some of the cases above, increases the effectiveness of these tuition laws.

Tuition paid entirely by the local unit is the first of three methods by which tuition is made entirely free. In Arizona, the unit for this purpose is the district; in Indiana, the school corporation, usually the township; in Iowa, the school corporation, whether district, independent district, consolidated district, or township; in Kentucky, the county. Illinois, Texas, Virginia, and Wisconsin also have this type of law.

By this method one goal has been reached—tuition has been provided without cost to the pupil. But, while we are seeking this goal, other considerations must be kept in mind. It will be quite generally conceded that free tuition ought not be secured at the expense of the elementary school. Will the requirement that the district pay all of the tuition have such an effect? Obviously, this will depend upon the conditions under which the law is carried out. If the unit paying the tuition is small or comparatively poor or has unusual educational demands upon it, the unit must sacrifice somewhat the efficiency of the elementary school in order to meet the requirements of the law or must bear a heavier school burden. Which alternative is accepted will depend upon the educational sentiment of the community. As the unit increases in size or wealth or its educational needs decrease, the danger of affecting the work of the elementary school decreases. There can, however, be no doubt that in some states there are districts that cannot support a standard elementary school, much less do this and pay the tuition of its eighth-grade graduates. Thus, State Superintendent Bishop of Nebraska reported in 1910 that there were 387 districts in 35 counties that were unable to maintain a school for five months when levying the maximum tax. It will be remembered that the law in that state protects such districts by relieving them of the requirement for paying high-school tuition.

A defect in some of the laws of this type is the setting of a maximum tuition rate. In Arizona it is $3 per month; in Indiana, $4

per month; In Iowa, $3.50 per month, except in one county having a county high school where the rate is $2.00 per month; in Virginia, $2.50 per month; in Wisconsin, $1 per week. What may happen is shown by a brief quotation from the 1910 report of the high-school inspector of Wisconsin: "The total cost of instruction alone was $958,543.20, or an average per pupil of $34.59; the total amount received and due for tuition was reported as $132,006.73, or less than 14 per cent of the whole. That is, these outside pupils paid only about one-half of their proper share of the cost of instruction. Even if the special aid of $125,000 received by these schools be added to the tuition, the entire amount will be less than their proportionate amount. The above figures take into account only the bare cost of instruction, the salaries of the teachers; the large expenditures for buildings, equipment, and general incidentals are borne entirely by the districts, and the non-residents receive the benefit without contributing anything whatever to the cost." As a result, Wisconsin has since that time raised the maximum rate from 50 cents per week to $1 per week. In 1909, Indiana raised the rate from $2 per month to $4 per month.

Such a defect in the law may be remedied either by setting no maximum rate or by making the rate so high that it will in all cases cover the actual cost to the high school attended. In view of the fact that high-school costs are increasing at a rather rapid rate and that legislation generally lags behind actual needs, the setting of a definite maximum seems undesirable. To the writer it would seem better to follow the plan employed by Illinois and other states of setting the maximum at the per-capita cost of maintaining the high school, with added provision for appeal to the proper school official when such cost seems excessive or when the admission of non-residents increases the cost to the high school unduly.

But such a change cannot remedy the inherent defect in this method—requiring the district to pay high-school tuition when it is unable to maintain more than a standard elementary school. Solution of this problem may come through some form of assistance from the state.

Free tuition in state-aided high schools is provided in Minnesota, North Dakota, Washington, Arkansas, and South Carolina.

Arkansas and South Carolina limit the pupils who may attend to those of the county in which the high school is located. The other states make no such limitation; the pupils may come from any part of the state.

In this method we have an extreme reaction to the method of requiring the district to pay all the tuition since here the district is not required to pay any of it. It is undoubtedly true that many districts are able to pay all or a part of this tuition, and it seems only fair that such districts should be required to do so. Table I presents data showing that some districts are able to pay this. The first ten in the list of state graded schools of Minnesota are given. The data are taken from the state report for 1907–8, the latest report in which the data are accessible.

TABLE I

School	Tax Rate	Variation from Average Rate	Percentage of Average Rate
Adams	10.40	− 6.17	62.7
Albany	8.90	− 7.67	53.7
Ashby	23.08	+ 6.51	139.3
Audubon	10.00	− 6.57	60.3
Aurora	4.50	−12.07	27.1
Avoca	22.70	+ 6.13	136.9
Badger	43.60	+27.03	263.1
Balaton	20.00	+ 3.43	120.7
Battle Lake	16.00	− .57	96.5
Beardsley	15.00	− 1.57	90.5
Average rate for state graded schools	16.57	.....	.....

In order to reach the minimum standard required by the state, six of the ten schools need not levy a tax equal to the average for state graded schools. Yet the pupils from these schools are allowed free tuition in state-aided high schools as well as are the pupils from those schools that levy more than the average tax rate.

Another result that may follow from the use of this method is the destruction of the good effects of the special state aid to high schools. It is presumed that when special aid is granted to a school, that school is worthy in itself of receiving this aid. If the school is compelled to care for any number of non-residents that may apply, it is conceivable that the special aid is merely aid for free tuition. While Wisconsin is not employing the method under discussion at this point, that state may be used to illustrate the

probable effect of a law requiring each state-aided high school to receive non-residents without charge. Wisconsin is cited because it is the only state for which data are available. The injustice shown here will be even less than might be expected from states employing this method, since Wisconsin schools may charge a tuition fee while the others may not. The state high-school inspector estimated in 1908 that the state aid of $500 per school, which was from $100 to $150 more than was actually given, would, when added to the regular tuition fee, provide free tuition for about 33 pupils. In 1908–9, 78 of the 268 four-year high schools had 33 or more non-resident pupils, so that in 78 high schools state aid was entirely, and in other high schools partly, diverted from its purpose. Since the tuition rate has been raised in that state, conditions now will be much better.

Both of the difficulties incident to providing free tuition in state-aided high schools may be overcome by a proper co-operation between the state and the local unit.

Co-operation of state and local unit.—One form of this co-operation is found in California and Pennsylvania where the amount given by the state to any high school must be deducted from the cost of maintaining the high school before the tuition rate may be estimated. This method has some advantage over both the other methods of furnishing entirely free tuition in that the district is given the advantage of sharing in such funds as the state appropriates to high schools, and the high school attended is not compelled to receive non-residents at a financial loss. However, no distinction is made in the different abilities of local units to pay the tuition.

A second form of this co-operation is that in which the state allows a certain amount or percentage per pupil and the district pays the remainder. Such laws are found in Massachusetts, New Jersey, and Rhode Island. In this connection should be mentioned Connecticut and New York which have permissive laws, and Maine, Delaware, New Hampshire, and Vermont which provide partially free tuition.

In some of these states no distinction is made in the ability of different districts to pay the tuition. Maine provides that two-

thirds of the tuition, not exceeding $500 to any town, shall be paid by the state. The result may be seen from the data for 1909–10 given in Table II. The first ten towns in the list of those receiving

TABLE II

Town	Paid for High-School Tuition	Rate Necessary to Raise This	Common School Tax	Entire School Tax
Alna	$ 87.20	.55 mills	3.5 mills	4.05 mills
Argyle	27.00	.43	8.9	9.33
Atkinson	103.50	.62	6.0	6.62
Avon	16.75	.09	2.3	2.39
Benton	174.86	.19	2.6	2.79
Bethel	1,107.50	1.10	2.0	3.10
Blanchard	16.00	.16	5.2	5.36
Boothbay	18.16	.03	3.5	3.53
Bowdoin	115.78	.34	2.9	3.24
Bradley	70.00	.36	3.3	3.36
Average rate for state				2.40

state aid for tuition are given. Avon and Benton have practically the average rate for the state; Argyle, Atkinson, and Blanchard, for example, have a much higher rate.

New Jersey has a similar type of law. There the state pays $25 for each high-school pupil whose tuition has been paid by the district.

Other states make provision for districts of different ability to pay different amounts. There is not space here to compare in detail the various methods employed for this purpose. All that may be attempted is to point out some of the more conscious attempts that are made to assist each community in paying its high-school tuition to the extent and only to the extent that its educational needs justify.

Rhode Island pays $25 for each of the first 25 pupils in average daily attendance and $15 for each of the second 25 pupils. This law is evidently based upon the theory that those districts sending more than 25 pupils to other high schools will be larger, and so presumably will be more able to pay the tuition than will those districts sending 25 pupils or less.

The Massachusetts law excludes from tuition aid all towns of 500 or more families and all having a valuation per pupil above the valuation per pupil of the entire state. All towns not so

excluded receive assistance as follows: if the valuation of the town is $1,000,000 or over, one-half the tuition is paid; if the valuation is under $1,000,000, all of the tuition is paid. This law makes the size of the town, the valuation of the town, and the average valuation per pupil the indices of the school needs.

The most elaborate law is found in New Hampshire. Here the tax rate levied is considered the index of need. If the town has a tax rate for school purposes below $3.50 per $1,000, or if the average rate for all purposes for five years preceding is less than $16.50, none of the tuition is paid. All other towns are aided according to the rate levied. Towns having a rate between $16.50 and $17.49 receive one-tenth of the tuition, and for each increase in rate of one dollar above that rate the state increases the percentage of the tuition paid by one-tenth. Thus, towns levying a rate of $25.49 or more would receive the entire cost of tuition from the state.

Do the tuition laws of Rhode Island and New Hampshire and the other states that refund different amounts to different communities provide for assistance according to need or are there other factors that, being more fundamental and constant than those shown here, will always give a better index of school needs? The answer can be given only after the collection of considerable data and after a careful evaluation of the conditions which each state has to meet. No answer is attempted here, but the proposition is advanced that if such factors exist they should be discovered and employed not only in free high-school tuition laws but in all laws covering public-school finance.

This evaluation of the methods now employed in providing free high-school tuition indicates that some form of co-operation between the state and the local unit is the preferable one. (1) It provides tuition without cost to the pupil. (2) It does not divert special state aid for high schools from its real purpose. (3) It tends to protect the elementary school by reducing the burden placed upon the home district of the pupil. (4) If the details are properly arranged, it will provide full compensation to the high school attended. (5) It offers an opportunity to require of the home district that payment which it is able to make and throws the rest of the burden upon the state.

REED COLLEGE

WILLIAM T. FOSTER
Portland, Oregon

Reed College was made possible in 1904 by the will of Amanda Wood Reed, of Portland, made in accordance with the wishes of Simeon G. Reed, her husband, who died in Portland in 1895. Mr. and Mrs. Reed came to Oregon from Massachusetts in 1851.

The will named five trustees, a self-perpetuating body, and wisely left to them the widest latitude in deciding the type of institution to be founded. The secretary of the General Education Board, Dr. Wallace Buttrick, made two trips to the Northwest for the purpose of studying educational needs. He submitted a full report to the Board. On motion of Dr. Charles W. Eliot, of Harvard University, the Board declared that the greatest educational need of Portland was a college of liberal arts and sciences. They further concurred with Dr. Buttrick in the opinion that there was no better spot in the United States for founding a college of the proposed type. In 1910, after taking counsel with other eminent educational leaders and after making an extensive survey of northwestern institutions, the trustees decided to establish first a College of Arts and Sciences.

The College began in temporary quarters in 1911 and in permanent buildings in 1912. The campus covers eighty-six acres in the city of Portland, on the east side of the Willamette River about three miles from the center of the city. Forty acres were the gift of the Ladd Estate Company. About seven hundred thousand dollars, which is all of the accumulated income from endowment except the amount appropriated for the current budget of the College, have been expended on grounds, buildings, and equipment. No additional funds are available for buildings, since the will forbids the use of any part of the present endowment for this purpose.

The endowment consists chiefly of forty-two pieces of real estate, centrally located, in the city of Portland. This guarantees the future

support of the College and fittingly links its material prosperity with that of the city which it is established to serve. The greater part of the endowment, however, is not now income-bearing and probably cannot wisely be made to contribute to the support of the College for some years to come.

Reed College is undenominational. The will provides that the institution "forever be and remain free from sectarian influence, regulation, or control, permitting those who may seek its benefits to affiliate with such religious societies as their consciences may dictate." No sectarian considerations enter into the election of trustees or faculty or the admission of students. There are religious meetings—daily chapel and Sunday vesper services, Bible-study classes, and Christian Association activities—in which all may take part without compulsion.

The eagerness of the College to provide the best possible conditions for the development of strong character is shown not merely or mainly in chapel services, but as well in the requirements for admission, the choice of the faculty, the scope and spirit of the curriculum, the refusal to tolerate neglect of studies, the conduct of athletics, the development of self-reliance and independent government among students, the co-operation of students and faculty in all community interests, and the uncompromising elimination of the most injurious activities of "college life."

As the notorious failures of college students to use their opportunities as they should are due partly to ignorance and the lack of timely, specific guidance, the College offers all Freshmen a systematic course of instruction, throughout the year, dealing with the actual problems of college life. The course comprises the following topics: the origin and development of the American college, the purpose of the college, departments of study, election of courses, principles and methods of study, note-taking, use of the library, student honesty, general reading and mental recreation, health, athletics, fraternity life, coeducation, college government, college spirit, religious affairs, the relation of the college to the community, the choice of a vocation.

The courses of instruction provide what is regarded as the best foundation for the professions of law, politics, medicine, ministry,

teaching, social service, journalism, and business. The entire resources of the institution are devoted to a liberal education suitable for these careers. There are no departments of agriculture, domestic art, engineering, forestry, military science, music, mining, or pharmacy. The College seeks to avoid the common error of spreading thinly over too much ground.

The participation of the faculty in the athletic tournaments, in the clubs, dances, campus-day events, and other social gatherings is a natural result of the dominant aims of the College. The traditional gulf between students and faculty appears to become, at Reed College, an imaginary line. The members of the faculty have been chosen primarily as enthusiastic teachers, men and women eager to make vital contact with individual students as human beings.

Social affairs at Reed College are inexpensive and simple, as becomes higher education, and are always subordinate to the main purposes of the College. There are no fraternities and no sororities, because the College prefers a wholesome, sensible, democratic social life of the entire institution. The dwelling-halls and the main building have social rooms for students and teachers and their friends. All but a few of the students live at home or in the dwelling-halls on the campus.

Money cannot purchase for any student better board, living accommodations, social opportunities, or instruction than is provided for all students. This is one of the minor conditions which has made Reed College a social democracy. Another is respect for productive labor; a large majority of the students are partially self-supporting. From the outset, most of the work in connection with the care of grounds, buildings, dining-hall, gymnasium, laundry, bookstore, laboratories, power plant, electrical equipment, fish experiment house and carpenter shop, and most of the multigrafing, typewriting, and other clerical work has been performed by students as means of self-support. This has given the whole student body a fine sense of proprietorship and responsibility. For this work, 70 per cent of the men students who were in attendance throughout the year 1913–14 received income from the College. Various loan funds have been established through generous gifts of friends. There are no free scholarships; all students are on exactly the same basis. Every

worthy student is helped who has already shown a marked capacity for helping himself.

The tuition fee of one hundred dollars covers about one-fourth of the cost to the College for the instruction of each student. The other three-fourths is paid from the income from endowment. Board and rooms are furnished at cost. The present cost of board is four dollars and fifty cents per week, and the charge for each room, regardless of location, is forty dollars for each semester.

The College desires only as many students as its resources and equipment can thoroughly care for. It has had from the beginning many more applicants than it could wisely admit. There were two hundred and sixty-three applicants for admission before a temporary building could be erected. Admission is based not merely on the completion of a secondary-school course of four years, or its equivalent, but on physical fitness, on scholarship above the average, on evidence of good character, earnestness of purpose, intellectual enthusiasm, qualities of leadership, and devotion to the true ideals of higher education. Young people whose interests or habits are inconsistent with these ideals are not welcome. The whole institution is organized and conducted for those students who are determined to gain the best possible preparation for the serious responsibilities of life.

As the traditional college-entrance examinations have neither discovered those qualified for college work nor kept out the others, and as ordinary certificates are vague and uncertain, varying from school to school and from subject to subject, often in extreme and always in unknown degrees, Reed College tries to take advantage of every other possible source of evidence concerning the fitness of candidates. The examination includes a personal interview by the President with each prospective student, as a result of which some are discouraged from undertaking the work of Reed College, some are advised to enter institutions better suited to their needs, and some of those who do enter the College have clearer ideas of the responsibilities involved.

As a supplementary effort to find out which applicants for admission are best qualified, the Department of Psychology has applied twelve carefully devised mental tests to every student who has ever

been admitted to the College. The correlations between relative standing in other entrance tests and in these psychological tests, and the correlations between achievement in the mental tests and achievement in the studies of the College are sought as guidance in judging candidates for admission.

No one is admitted until he has passed the physical examinations of the College physicians and of the directors of physical education. This does not mean that physical perfection or unusual strength is required; it does mean that the college community is guarded against contagious disease before the opening day and against the admission of students whose health would be endangered by stringent scholarship requirements. It means further that the College has, from the outset of the student's course, the necessary basis for prescribing his physical exercises and otherwise promoting his health.

No special students and no preparatory students are or ever have been admitted, and no students are or ever have been admitted on condition. That is to say, only those are accepted who are judged to be wholly prepared, before entrance, for the work of Reed College.

The government of the students, including the conduct of examinations and the administration of the dwelling-halls, is almost exclusively in the hands of the Student Council, elected annually by vote of all the students. The faculty has made no rules for conduct or discipline and has never overruled a decision of the Student Council. There is no "honor system" at Reed College, devised to cover certain hours or certain exercises; there is a principle of honor which is regarded as sufficient to cover all phases of student life at all times.

When nearly the entire faculty left the College for three days last spring to attend the annual Pacific Coast Convention of Scientific Societies at Seattle, the students took entire charge of the institution, including the conduct of all the classes and of the administration offices. The interesting fact is not that the students were willing and able to do this, but that the procedure was taken by everybody as a matter of course. It was important for the faculty to attend the meetings of fellow-scientists; it was important for the students that the work of the College should go on. So it went on; they did not even stop to discuss the matter.

The requirements for graduation from Reed College cannot be stated in years of residence, nor merely in courses completed, much less in hours or units of work. All students are graded by relative position according to a scientific system, based on a normal probability curve. Credit is given for quality as well as for quantity of work, and each student is recommended for a degree as soon as he earns it. There is no reporting of grades in courses. Upon the recommendation of that member of the faculty whom the student has chosen as his special counselor, the student comes up for a final oral examination in his major subject and closely related subjects before a committee made up of the faculty and of persons not otherwise connected with the College. This final examination is not designed to cover particular courses of the curriculum; its purpose is to find out whether the student, at the time when he proposes to graduate from the College, has a creditable grasp of his chief subject of study. It is partly for breadth of view and a non-academic standard that not all the examiners are teachers of the candidate. During the last semester of his residence the student takes a seminar in his major subject, in connection with which he prepares a thesis. A satisfactory thesis and final oral examination are required for the Bachelor's degree.

From the outset, Reed College has been false to the venerable traditions of the American college of liberal arts; for its interests, its activities, and its influence have extended far beyond its campus. In the three years of its life, the College has made many vital connections with the city, of some importance as social service and of incalculable benefit to the College because of the healthful reactionary influence upon it. Members of the faculty have been active in connection with innumerable organizations devoted to public welfare; the Oregon Civic league, for example, and the Oregon Social Hygiene Society, the Portland Vice Commission, the Recreation League, the Drama League, the Young Men's Christian Association, the Greater Portland Plans Association, the Society for Dental Education, the Public Library Association, the Portland Commercial Club, and the Consumers' League of Oregon.

The College has frequently had calls for assistance from various departments of the city government and has conducted many investi-

gations as a basis for civic improvements. One of these was a survey of Portland vaudeville and motion-picture shows, made by a committee of sixty at the request of the mayor of Portland. Another was a comprehensive study of the most significant facts concerning four hundred and thirty-one of the unemployed men in Portland. The city is constantly used as a laboratory by the College, especially by students of psychology, government, and sociology.

The students are called upon for important aid in connection with such varied affairs as the city elections, the churches, the Jewish Neighborhood House, the Frazier Home, the Young Men's Christian Association, the Committee of One Hundred for Oregon Dry, the Red Cross, the Good Roads Campaign, the Oregon Fish and Game Commission, the Municipal Court, the Public Education Committee of the Social Hygiene Society.

Already the annual spring conference of Reed College is looked upon as the clearing-house and source of inspiration for all organizations seeking to promote the welfare of the city. At the "Portland 1915 Conference" last May, for example, more than one hundred organizations were represented by speakers, exhibits, and delegates. Several thousand of the most active workers for the progress of the city met at Reed College for three days to set definite stakes for achievement, to interchange ideas, to enlist recruits, to arouse enthusiasm, and to get results. Scores of societies, with diverse objects and members, are co-operating with the College for the good of the city, eagerly and in fine spirit.

Typical of the attitude of the College toward the city and of the willing response of the people is the success of the Reed College Extension Course on "The Voter and the City of Portland." This course of six lectures, illustrated by three hundred lantern slides, aims to present to voters and prospective voters such vivid, concrete, non-partisan, and accurate information concerning every phase of the city's business as may be most useful to the men and women of Portland in meeting their duties of citizenship. The lectures have already been attended by over thirty-five hundred people and are now being given by a member of the Student Council to the classes in civics of the public schools of Portland and at the Central Library by a member of the faculty.

Extension courses, open to everybody free of charge, are conducted at Reed College, at the Main Public Library, at the Branch Libraries, at churches, and in various other parts of the city of Portland. These courses began the year the College was founded. The attendance in 1913–14 was over four thousand.

Physical education, careful examinations, and individual guidance by the College physicians and directors, and wholesome athletic sports, especially competitive games in the open air, are provided for all, teachers and students, men and women, for the sake of joy, recreation, health, and development. Intercollegiate athletic contests are excluded because they are antagonistic to the physical development of students and to scholarship, as well as because they always necessitate unwarranted expense and usually involve more serious evils. The Reed College ideal for athletics is out-of-door games in moderation for all students, especially those who need them most, instead of the excesses of intercollegiate games for a few students, especially those who need them least.

In the fall of 1914 every student in Reed College received some of the benefits of athletics; about 80 per cent of the students engaged in some form of exercise at least three times a week, approved by the Department of Physical Education. There is room for everybody—baseball and football fields, tennis courts, a quarter-mile track, a gymnasium, a lake, a river, and the open country. The faculty takes part in athletics on the same terms with the students and for the same purposes; it may be said, incidentally, that the faculty teams have held their own in tennis, basket-ball, handball, and baseball. The expenses are insignificant. The average amount per student expended on athletics by the Student Council in one year was sixteen cents. In a word, athletics at Reed College are conducted as education, not as business.

VOCATIONAL GUIDANCE IN BOSTON[1]

FRANK V. THOMPSON
Assistant Superintendent of Schools, Boston, Massachusetts

There is much in our present industrial, social, and democratic environment which emphasizes this function of guidance in the schools. In our present social scheme, among other factors, it is the danger of the omission of the principle which has given the principle no little importance, for in our ills today we are impressed with the necessity of prevention of ailment rather than the curative treatment of it. Specifically illustrated, we no longer wait until a boy has been committed to a penal institution before he is taught a trade, but we teach him a trade, among other reasons, that he may avoid such commitment.

Again, there is the influence of the application of scientific principles to human factors as well as to material processes. The choosing of a vocation by the "trial and error" method seems to be as unprofitable here as elsewhere. There is too much staked on one chance, and there are so few chances to try again. The chances are always against the boy, and success means luck rather than merit.

Personally, I have often felt the need of emphasizing the proper mental attitude on the part of the youth toward his prospective job. Grit and courage, I believe, have more to do with successful adjustment to the job than special aptitude. It must be remembered that special aptitude toward any work is frequently accompanied by painfully evident special inaptitude. The attitude toward the job is always as important as aptitude for the job. Moral attitude has seemed to count more than fortunate mental and physical gifts. What vocational counseling would have advised the youthful Demosthenes to study oratory?

[1] Read at the Annual Meeting of the National Vocational Guidance Association, Richmond, Virginia, December 9, 1914.

Vocations are less plastic than the individuals who pursue them. Individuality in the job was the mark of the handicraft stage; automatic machinery, measured time reactions, and standard products make the job comparatively inflexible. The process of adaptation is in the worker, rather than in the work. Competent vocational guidance must induct young workers into the real world as it is, with all its uncompromising facts. We must not allow our boys and girls to believe that there is any royal road to vocational success, any more than to learning. Some of our present school influences are at wide variance with the main tendencies in our industrial society. The unrestricted elective system in high schools emphasizes aptitude and individuality out of proportion to our industrial structure, wherein co-operation, social subordination, and standardized tasks are basic principles.

The few scientific tests for vocational aptitudes that we now possess give us more of concern than of promise. The vocational counselor wishes to know what a boy can do, more than what he cannot do. Our psychological tests are aptly called eliminative tests. They are more negative than positive; they eliminate but do not evaluate. The practical methods to be at once adopted by vocational counselors are those which are obvious rather than obscure. The school records of pupils, if properly kept and reasonably comprehensive, furnish enough presumptive evidence upon which effective guidance can be tentatively based. Joint conference with the youth and his parents will give the counselor enough additional information upon which to give competent advice, for we must remember that guidance is a different function from placement.

In Boston concrete and definite plans for organized work in vocational guidance are gradually taking shape. Faster progress is prevented chiefly by a lack of funds. Most of our work at present is on a voluntary basis and, while well intentioned and often effective, still lacks the force and achievement which is the result of expert and compensated service. Our present organization for carrying on vocational guidance is as follows: Each elementary school has two teachers assigned to act as official vocational counselors; one of the teachers deals with the pupils leaving to go to work, and the other advises pupils and parents

regarding profitable choice of high-school courses. Each high school has one teacher and sometimes more assigned as counselors, but here counseling is limited chiefly to pupils leaving school to go to work.

Several special schools, such as the Trade School for Girls and the Boston Industrial School for Boys, have provision in their organization for the appointment of special teachers known as vocational assistants, who have definite assignment of duties covering guidance, placement, and follow-up work. In the Trade Schools for Girls vocational assistants have been at work for several years past and what they have been able to achieve furnishes encouragement as to what may be expected as the result of the extension of the kind of service they are giving. Assignment of actual instruction is limited to one period and is for the sole purpose of bringing the vocational assistant and pupil together for more intimate acquaintance. The chief duties of the vocational assistant may be summarized as follows: Visiting the homes of girls who are absent; visiting shops to learn of places; answering calls for employment and placing girls in shops; following up records of girls in shops, assisting in adjustments, and sometimes replacing girls. In addition, these vocational assistants are present at the school one evening a week for conference with working girls who are unable to appear during school hours, and lastly they keep all essential records of the girls, containing information relating to the school, the home, and the shop. Very recently the High School of Commerce has had incorporated into its organization a department head whose chief function is guidance, placement, and follow-up work. A special instructor is assigned to similar duties in the High School of Practical Arts. A general director for vocational guidance has only this year been appointed, but he is primarily an officer in the Continuation School organization, and, consequently, can devote the lesser part of his time to the specific problem of vocational guidance.

Some description of the relation of vocational guidance to continuation schools may profitably be given at this point. When boys and girls under sixteen years of age leave school to go to work, they must secure the necessary working certificate. The process

of securing the certificate involves an interview with the director of vocational guidance. From the school comes a somewhat detailed statement covering not only what is conventionally known as the school record,[1] but, in addition, a detailed account of personal qualities, evident aptitudes or shortcomings, and home conditions. Personal conference enlightened by school information enables the director to give supplementary advice regarding the prospective job and to assign with some basis of presumptive evidence the proper course to pursue in the compulsory continuation school. Guidance and follow-up work are essential features of the Continuation School course, and the teachers of the school are given definite time in their progress to attend to these functions.

The Placement Bureau of Boston comes indirectly into the problem of vocational guidance. This institution is not an official organization of the public schools. It is conducted chiefly by private enterprise although receiving a small subvention in the way of rental from public school funds. The School Committee of Boston has encouraged co-operation with this institution on the part of the schools. Copies of the vocational information cards, mentioned above, are given to the Placement Bureau, which is often instrumental in finding suitable places for boys and girls leaving school. The Placement Bureau has rendered effective service in replacing boys and girls who have left positions for one reason or another. The Boston Chamber of Commerce has aided the Placement Bureau freely by urging employers to resort to the institution in looking for juvenile employees.

During the past few years the attempt has been made to acquaint our voluntary workers in vocational guidance with some of the most important facts and conditions of industry and business. Our vocational counselors everywhere, except in certain special schools mentioned above, serve without additional compensation and also with no exemption from their regular duties. Consequently, no large demands upon their time can reasonably be expected. Business men, store superintendents, and trade experts have, from time to time, made addresses to gatherings of vocational counselors assembled from all over the city at central points.

[1] See accompanying card.

249 BOSTON PUBLIC (1914) SCHOOLS

PERSONAL RECORD OF PUPIL
CONTINUATION SCHOOLS

Personal Record of .....
First name Initial Last name

School.....Home address.....District.....Suite or floor.....
Sex.....Color.....Date of birth.....Birthplace.....Years in U.S.....
Father's name.....Occupation.....Business address.....
Mother's name.....Occupation.....Business address.....
If either parent is not living so indicate by placing # before the parent's name
Date of this record.....Date of leaving school.....Grade on leaving.....Teacher's name.....

PHYSICAL CHARACTERISTICS: Weight.....Height.....Neatness.....
Special physical defects .....
Remarks .....

SCHOOL RECORD: Conduct.....Times present.....Times absent.....Cause of absence.....Times tardy.....
Arithmetic.....English.....Geography.....Reading.....History.....Grammar.....Music.....Spelling.....
Drawing.....Manual training.....Sewing.....Cooking.....Penmanship.....Science.....Physical training.....Physiology.....
HIGH SCHOOL SUBJECTS. Course.....
English.....History.....Foreign language.....Mathematics.....Science.....Clerical Arts.....Domestic Arts.....
Special talents .....

GENERAL CHARACTERISTICS: Reliable.....Industrious.....Obedient.....Cheerful.....Courteous.....Has pupil initiative?.....
Remarks .....

Has pupil indicated any interest which should assist in the selection of an occupation?.....
If so, what interest?.....What occupation?.....
Do you as {Teacher / Vocational Counselor} think this interest should be encouraged?.....Parents' reference for child's work?.....
Previous work record.....
Is the aid of the Placement Bureau desired?.....
Remarks.....

THIS RECORD IS TO BE FORWARDED TO THE EMPLOYMENT CERTIFICATE OFFICE, 218 TREMONT STREET, BOSTON, MASS.

More benefit has resulted from contact with special private institutions like the Vocation Bureau and the Girls' Trade Education League. The bulletins and monographs of those two organizations have been of value in furnishing the specific information about industry and business together with wages and working conditions prevailing therein, which the counselors need to know. We have been fortunate in Boston in enjoying close association with the Vocational Bureau which has been a central point of organization and information upon vocational guidance for the whole country. We owe today our vision of the possibilities and appreciation of the need of vocational guidance to the Vocation Bureau.

During the current year we are trying a different method from the lecture system in acquainting our counselors with the problems and duties of guidance. We are carrying on a series of locality conferences under the charge of the director at which discussions take place concerning the way to solve problems as they originate in the schools. The attempt is thus being made to organize the experience of the members of local groups who usually are confronted with conditions rendered more or less uniform by reason of similar prevailing social and economic circumstances. As stated before, the present problems of vocational guidance are more obvious than obscure, but organizing the obvious is not an involuntary, automatic process, but requires specific and careful attention and needs completion before more developed and complex procedure may be undertaken.

The functions of vocational guidance should be more extensive than usually conceived at the present time; in fact, vocational guidance, in its limited sense, cannot be fully effective unless supplemented by personal, moral, and social guidance. Unless the scope of guidance is broadened we may be in danger of having its functions looked upon as a sort of sublimated fortune-telling or palm-reading. We feel the need in the schools, as never before, of knowing more of the home environment and limiting circumstances of the boys and girls in our schools. But the schools at present lack organization and the means of assuming effectively larger burdens. Quite recently one large high school in Boston has accepted the assistance of the social workers of several settle-

ment houses in investigating cases of school delinquency and irregularities. These school visitors have been asked to go into the home to confer with parents about failure in school work, about irregular attendance, and about marked infractions of school discipline. The results have proven of great service to the teachers of the school and to the parents of the children. The teachers, more often than not, have seen that they have misunderstood the causes of failure to respond to accepted classroom standards, that what was supposed to be a moral lack was in reality something very different and quite condonable when the real reasons had been secured. The parents, as well, have been led to see that the school is something more than an unsympathetic institution making demands for conformity with regulations more legal than human.

The vocational counselor, or perhaps we should say the school counselor, may properly conceive her duties as embracing quite prominently the functions indicated immediately preceding. She should know the child in the school, in the home, and in the workshop, and should be a source of guidance to the teacher in the classroom, to the parents in the home, and to the child in his several relations in the home, the school, and the workshop.

It is quite natural that it should be assumed that there is a place in many schools, both elementary and secondary, in our large cities for one or more trained teachers possessing both sympathy and capacity for the problems of the counselor. The principle that vocational schools need this special service is already admitted in Boston and elsewhere. It will be illogical to deny that general schools need similar special service, for the motive today of our secondary schools is largely vocational. A large number of our boys and girls are unable to find places in our special vocational schools and resort to the general schools where they pursue special courses which promise to offer some of the advantages of the special school. A current study into the state of commercial education in our Boston high schools reveals the fact that from 50 to 90 per cent of our pupils are enrolled in commercial courses. This means that there are in this single field thousands of boys and girls in our own school system who need the special service of guidance, placement, and follow-up work. Our boys and girls are

receiving this attention in part and as much as is reasonably possible under the limitations of the time and energy of the regular teachers, but the shortcomings of our present achievements simply emphasize the need of additional and more expert assistance if the sound, sensible, and long-cherished aim of our schools is to be better realized in our day and generation.

An able and influential monthly magazine contains in the current issue a bitter and brilliant indictment of our American school system, comparing it disadvantageously to the systems of Sweden and Norway, with their agricultural and technical folk schools. "We are content," our critic says, "to hang the alphabet and multiplication table around the child's neck and then send the poor thing out to educate itself."

The awakening of the people and the teachers of this country to the need of vocational education, vocational guidance, varied and specific educational opportunities of a great variety constitutes the best answer to the above taunt. We have not as a nation failed to hold a noble aim for education, but many will agree that we need to proceed energetically toward the adoption and extension of more effective methods of attaining our aim.

THE SOCIETY OF COLLEGE TEACHERS OF EDUCATION

The Society will meet with the Department of Superintendence in Cincinnati on Tuesday, February 23. There will be two sessions and the usual luncheon, the places to be announced in the final program of the Department of Superintendence.

9:00 A.M.

Committee on Normal Schools

"Aims of Departments of Education in Colleges and Universities." Carter Alexander, George Peabody College for Teachers.

"Facilities for Teacher-Training in Colleges and Universities." Charles Hughes Johnston, University of Illinois.

"Credit Granted by Colleges and Universities to Graduates of Normal Schools." W. C. Ruediger, George Washington University.

"Recognition Given College and University Graduates in the Granting of Teachers' Certificates." Harlan Updegraff, University of Pennsylvania.

"Curricula and Requirements for Degrees in College and University Departments of Education." F. E. Bolton, Washington State University.

12:30 P.M.

Luncheon.

2:30 P.M.

Business Meeting.

Committee on Rating, Placing, and Promotion of Teachers.

"Proposal of Principles." F. E. Thompson, *chairman*, University of Colorado.

"Scholarship in Relation to Teaching Efficiency." F. L. Clapp, University of Illinois.

"A Method for Grading and Controlling the Judging of Teaching Efficiency." A. C. Boyce, University of Chicago.

Report of Committee on School Surveys. E. C. Moore, *chairman*, Harvard University.

Proposal for Uniform Nomenclature in Education. W. C. Bagley, University of Illinois.

Members will be given detailed notification of the final arrangements by mail. The Yearbook will be out about February 6 and will contain the papers listed in the program, with the exception of those by Professors Bolton and Bagley.

CONSTITUTION

In order to promote the teaching of education in the colleges and universities of the country, we, the undersigned, do hereby adopt the following:

ARTICLE I. NAME

This association shall be styled The Society of College Teachers of Education.

ARTICLE II. PURPOSE

It shall be the general purpose of this society to improve the work of the departments of education in the colleges and universities of the country. To this end it shall (1) Ascertain in as great detail as possible what is actually being done from time to time in the various colleges and universities, and this information shall be disseminated among its members in the most effective manner. (2) It shall encourage wise experimentation in developing new courses in education in colleges and universities. (3) It shall, through committees or otherwise, attempt to determine the relative value for college and university students, both graduate and undergraduate, of different courses in education. (4) It shall study the relationship of the department of education to other departments in colleges and universities, to the end that this relationship may be most harmonious and helpful. (5) It shall discuss current educational theory so far as this is germane to the work of the members of the association.

ARTICLE III. MEMBERSHIP

SECTION 1. All teachers of educational subjects in bona fide colleges and universities shall be eligible to membership in this society.

SEC. 2. All those persons who were in attendance upon the first meeting in Chicago, and who shall sign this constitution and pay the membership fee, shall be regarded as charter members. All other members shall be elected by the executive committee.

SEC. 3. Members shall be elected by the executive committee, and shall pay annual dues of two dollars. Other funds necessary for the maintenance of the society shall be raised by assessments levied on the members of the society. (Amendment of February 25, 1903.)

ARTICLE IV. OFFICERS

SECTION 1. The affairs of the society shall be placed in the hands of an executive committee of five members, including the president and secretary. The president shall preside at the meetings of the society, and the secretary shall assume all the duties usually devolving upon such

an officer. In addition, he shall take charge of the funds of the association and expend them under the direction of the executive committee. The president and the secretary shall be elected annually by the members of the society.

SEC. 2. Of the members of the executive committee one shall be elected each year by the members of the society, and shall hold office for three years.

ARTICLE V. MEETINGS

There shall be one meeting of the society each year, to be held at the same time and place as the meeting of the Department of Superintendence of the National Education Association until otherwise determined by vote of the society. The executive committee shall have charge of all details in arranging for each meeting.

ARTICLE VI. AMENDMENTS

Amendments may be made to this constitution by a two-thirds vote of the members of the society at a meeting subsequent to that at which the amendment has been proposed in writing.

OFFICERS FOR 1914–15

President, W. W. Charters, Dean of the School of Education, University of Missouri.

Secretary-Treasurer, Carter Alexander, Professor of School Administration, George Peabody College for Teachers.

Executive Committee: the President and Secretary, ex officio; Paul Monroe, Professor of History of Education, Columbia University; F. E. Thompson, Professor of Education, University of Colorado; W. A. Jessup, Dean of the School of Education, Iowa State University.

COMMITTEES FOR 1914–15

Committee on Rating, Placing, and Promotion of Teachers:

L. D. Coffman, University of Illinois.
E. P. Cubberley, Leland Stanford Junior University.
E. C. Elliott, University of Wisconsin.
George F. James, University of Minnesota.
William H. Kilpatrick, Columbia University.
W. S. Sutton, University of Texas.
F. E. Thompson, University of Colorado, *chairman*.
A. S. Whitney, University of Michigan.

Committee on Rating of Normal Schools in Relation to Departments of Education in Colleges and Universities:

Carter Alexander, George Peabody College for Teachers.
F. E. Bolton, State University of Washington.

J. J. Doster, University of Alabama.
W. A. Jessup, Iowa State University, *chairman*.
Charles H. Johnston, University of Illinois.
W. C. Ruediger, George Washington University.
G. D. Strayer, Columbia University.
Harlan Updegraff, University of Pennsylvania.

Committee on School Surveys:
M. B. Hillegas, Columbia University.
A. J. Inglis, Rutgers College.
C. H. Judd, University of Chicago.
H. W. Josselys, University of Kansas.
E. C. Moore, Harvard University, *chairman*.

MEMBERSHIP LIST, JANUARY 1, 1915

ALEXANDER, CARTER
Professor of School Administration, George Peabody College for Teachers, Nashville, Tenn.

ANDERSON, LEWIS F.
Professor of History and Philosophy of Education, Ohio State University, Columbus, Ohio.

AYER, FRED C.
Professor of Theory and Practice of Education, University of Oregon, Eugene, Ore.

BAGLEY, W. C.
Director of School of Education, University of Illinois, Urbana, Ill.

BAKER, LEONARD
Professor of Education, University of South Carolina, Columbia, S.C.

BALDWIN, BIRD T.
Professor of Psychology and Education, Swarthmore College, Swarthmore, Pa.

BALLIET, THOMAS M.
Dean of the School of Pedagogy, New York University, New York City.

BARR, W. F.
Director of the School of Education, Drake University, Des Moines, Ia.

BELL, J. CARLETON
Chairman of School of Art of Teaching, University of Texas, Austin, Tex.

BENNETT, H. E.
Professor of Philosophy and Education, College of William and Mary, Williamsburg, Pa.

BENTLEY, R. C.
Associate Professor of Education, Leland Stanford Junior University, Stanford University, Cal.

BERRY, CHARLES SCOTT
Assistant Professor of Education, University of Michigan, Ann Arbor, Mich.

BINGHAM, W. VAN DYKE
Assistant Professor of Psychology and Education, Dartmouth College, Hanover, N.H.

BLACK, WILLIAM W.
Dean and Professor of Education, School of Education, Indiana University, Bloomington, Ind.

BLUE, LEONARD A.
Dean and Professor of Education, New State College for Teachers, Albany, N.Y.

BOBBITT, J. F.
Assistant Professor of School Administration, University of Chicago, Chicago, Ill.

BOLTON, F. E.
Dean of School of Education, State University of Washington, Seattle, Wash.

BOYD, W. W.
Professor of Education, Western College for Women, Oxford, Ohio.

BREED, FREDERICK S.
Assistant Professor of Education, University of Michigan, Ann Arbor, Mich.

BUCHNER, EDWARD FRANKLIN
Professor of Education and Philosophy, Johns Hopkins University, Baltimore, Md.

BUCKNER, CHESTER A.
Assistant Professor of Education, University of Kansas, Lawrence, Kan.

BURNHAM, W. H.
Professor of Pedagogy and School Hygiene, Clark University, Worcester, Mass.

BURRIS, WILLIAM P.
Dean of the College for Teachers, University of Cincinnati, Cincinnati, Ohio.

BUTLER, NATHANIEL
Professor of Education and Director of Co-operation with Secondary Schools, University of Chicago, Chicago, Ill.

BUTTERWORTH, JULIAN E.
Professor of Secondary Education, University of Wyoming, Laramie, Wyo.

CARTER, R. E.
Assistant Professor of Education, University of Kansas, Lawrence, Kan.

CHAMBERS, WILL GRANT
Dean of School of Education, University of Pittsburgh, Pittsburgh, Pa.

CHARTERS, W. W.
Dean and Professor of Theory and Practice of Teaching, School of Education, University of Missouri, Columbia, Mo.

CHASE, H. W.
Professor of the Philosophy of Education, University of North Carolina, Chapel Hill, N.C.

CHILDS, H. G.
Associate Professor of Education, Indiana University, Bloomington, Ind.

CLARK, HARRY A.
Professor of Secondary Education, University of Tennessee, Knoxville, Tenn.

CLAXTON, P. P.
United States Commissioner of Education, Bureau of Education, Washington, D.C.

COFFMAN, LOTUS D.
Professor of Education, University of Illinois, Urbana, Ill.

COLEMAN, GEORGE T.
Professor of Education, Hiram College, Hiram, Ohio.

COLEMAN, H. T. J.
Dean, Faculty of Education, Queen's University, Kingston, Ontario, Canada.

COURSAULT, JESSE H.
Professor of the History and Philosophy of Education, University of Missouri, Columbia, Mo.

CUBBERLEY, ELWOOD P.
Professor of Education, Leland Stanford Junior University, Stanford University, Cal.

DAVIDSON, PERCY E.
Associate Professor of Education, Leland Stanford Junior University, Stanford University, Cal.

DAVIS, CALVIN O.
Junior Professor of Education, University of Michigan, Ann Arbor, Mich.

DEAHL, JASPER N.
Professor of Education, West Virginia University, Morgantown, W.Va.

DEARBORN, W. F.
Assistant Professor of Education, Harvard University, Cambridge, Mass.

DEWEY, JOHN
Professor of Philosophy, Columbia University, New York City.

DICK, G. S.
Director of Teacher Training, Iowa State Teachers College, Cedar Falls, Ia.

DORCAS, H. C.
Professor of Education, University of Iowa, Iowa City, Ia.

DOSTER, JAMES J.
Dean of School of Education, University of Alabama, University, Ala.

DUGGAN, STEPHEN P.
Professor of Education, College of the City of New York, New York City.

EBY, FREDERICK
Professor of History of Education, University of Texas, Austin, Tex.

ELLIFF, J. D.
Professor of High-School Administration and High-School Visitor, University of Missouri, Columbia, Mo.

ELLIOTT, EDWARD C.
Director of the Course for the Training of Teachers, University of Wisconsin, Madison, Wis.

ELLIS, A. CASWELL
Professor of the Philosophy of Education, University of Texas, Austin, Tex.

ELLIS, CHARLES CALVERT
Professor of Pedagogy and Philosophy, Juniata College, Huntingdon, Pa.

FANT, ANNA L.
Professor of Education, Mississippi Industrial College, Columbus, Miss.

FARRINGTON, FREDERICK E.
Associate Professor of Educational Administration, Teachers College, Columbia University, New York City.

FISK, HERBERT F.
Professor of Education, Northwestern University, Evanston, Ill.

FORBES, GEORGE M.
Professor of Philosophy and Pedagogy, Rochester University, Rochester, N.Y.

FORDYCE, CHARLES
Dean of Teachers College and Professor of Educational Theory and Practice, University of Nebraska, Lincoln, Neb.

FOSTER, H. H.
Professor of Philosophy and Education, Ottawa University, Ottawa, Kan.

FOSTER, WILLIAM T.
President of Reed College, Portland, Ore.

FREEMAN, FRANK N.
Assistant Professor of Educational Psychology, University of Chicago, Chicago, Ill.

GAMBRILL, BESSIE LEE
Professor of Philosophy and Education, Alfred University, Alfred, N.Y.

GARD, W. L.
Professor of History and Principles of Education, Ohio University, Athens, Ohio.

GORE, WILLARD C.
Assistant Professor of Psychology, College of Education, University of Chicago, Chicago, Ill.

GRAVES, FRANK P.
Dean of the School of Education and Professor of the History of Education, University of Pennsylvania, Philadelphia, Pa.

GRAY, C. T.
Instructor in the Art of Teaching, University of Texas, Austin, Tex.

HAGGERTY, M. E.
Professor of Educational Psychology, Indiana University, Bloomington, Ind.

HALL, JOHN W.
Professor of Elementary Education, University of Cincinnati, Cincinnati, Ohio.

HALL-QUEST, ALFRED L.
Associate Professor of Education, University of Virginia, Charlottesville, Va.

HANUS, PAUL HENRY
Professor of Education, Harvard University, Cambridge, Mass.

HARTSON, LOUIS D.
Assistant Professor of Psychology and Education, Grinnell College, Grinnell, Ia.

HECK, W. H.
Professor of Education, University of Virginia, University, Va.

HECKMAN, SAMUEL B.
Assistant Professor of Education, College of the City of New York, New York City.

HENDERSON, ERNEST N.
Professor of Education, Adelphi College, Brooklyn, N.Y.

HENMON, V. A. C.
Professor of Educational Psychology, University of Wisconsin, Madison, Wis.

HENRY, D. W.
Assistant Professor of Education and Psychology, University of Toledo, Toledo, Ohio.

HILL, ALBERT ROSS
President, and Professor of Educational Psychology, University of Missouri, Columbia, Mo.

HILL, JOSEPH H.
Professor of Education, Boston University, Boston, Mass.

HILLEGAS, M. B.
Assistant Professor of Elementary Education, Columbia University, New York City.

HOLLISTER, HORACE A.
High-School Visitor, University of Illinois, Urbana, Ill.

HOLMES, HENRY W.
Assistant Professor of Education, Harvard University, Cambridge, Mass.

HOLTON, E. L.
Professor of Education, Kansas Agricultural College, Manhattan, Kan.

HORNE, HERMAN HARRELL
Professor of the History of Education and of the History of Philosophy, New York University, New York City.

HUGHES, PERCY
Professor of Philosophy and Education, Lehigh University, South Bethlehem, Pa.

INGLIS, ALEXANDER J.
Assistant Professor of Secondary Education, Harvard University, Cambridge, Mass.

JACKSON, GEORGE L.
Assistant Professor of Education, University of Michigan, Ann Arbor, Mich.

JACOBS, WALTER BALLÖU
Professor of Education, Brown University, Providence, R.I.

JAMES, GEORGE F.
Dean, College of Education, University of Minnesota, Minneapolis, Minn.

JESSUP, W. A.
Director of School of Education, State University of Iowa, Iowa City, Ia.

JOHNSTON, CHARLES HUGHES
Professor of Secondary Education, University of Illinois, Urbana, Ill.

JONES, A. J.
Professor of Education, University of Maine, Orono, Me.

JONES, ELMER E.
Professor of Education, Northwestern University, Evanston, Ill.

JOSSELYN, H. W.
Associate Professor of School Administration, University of Kansas, Lawrence, Kan.

JUDD, CHARLES HUBBARD
Director of the School of Education, University of Chicago, Chicago, Ill.

JUDD, ZEBULON
Professor of Rural Education, University of North Carolina, Chapel Hill, N.C.

KEMP, W. W.
Professor of Education, University of Montana, Missoula, Mont.

KENNEDY, JOSEPH
Dean of the School of Education, University of North Dakota, Grand Forks, N.D.

KENT, H. L.
Associate Professor of Education, Kansas State Agricultural College, Manhattan, Kan.

KIERAN, JAMES M.
Professor of Education, Normal College, 68th Street and Park Avenue, New York City.

KILPATRICK, WILLIAM H.
Assistant Professor of Education, Teachers College, Columbia University, New York City.

KING, IRVING
Assistant Professor of Education, University of Iowa, Iowa City, Ia.

KIRBY, T. J.
Professor of Elementary Education, University of Pittsburgh, Pittsburgh, Pa.

KLAPPER, PAUL
Assistant Professor of Education, College of the City of New York, New York City.

LOUGH, JAMES E.
Professor of Educational Psychology and Methods, New York University, New York City.

LUCKEY, GEORGE W. A.
Head Professor of Education, University of Nebraska, Lincoln, Neb.

MCCONAUGHY, JAMES L.
Professor of Education, Bowdoin College, Brunswick, Me.

MCKEAG, ANNA J.
Professor of Education and President of Wilson College, Chambersburg, Pa.

MACLEAR, MARTHA
Assistant Professor of Education, Howard University, Washington, D.C.

MCMURRY, FRANK MORTON
Professor of Elementary Education, Teachers College, Columbia University, New York City.

MACVANNEL, J. A.
Professor of Philosophy of Education, Teachers College, Columbia University, New York City.

MEAD, A. R.
Associate Professor of Education, Ohio Wesleyan University, Delaware, Ohio.

MERIAM, JUNIUS L.
Professor of School Supervision, University of Missouri, Columbia, Mo.

MILLER, E. A.
Professor of Education, Oberlin College, Oberlin, Ohio.

MILLER, HARRY L.
Assistant Professor of Education, University of Wisconsin, Madison, Wis.

MILLER, IRVING
Assistant Professor of Philosophy and Education, University of Rochester, Rochester, N.Y.

MONROE, PAUL
Professor of the History of Education, Teachers College, Columbia University, New York City.

MOORE, ERNEST CARROLL
Professor of Education, Harvard University, Cambridge, Mass.

MOORE, L. B.
Dean of Teachers College, Howard University, Washington, D.C.

NICHOLS, CLAUDE A.
Professor of Education, Southwestern University, Georgetown, Tex.

NOE, J. T. C.
Professor of Education, Kentucky State University, Lexington, Ky.

NORSWORTHY, NAOMI
Associate Professor of Educational Psychology, Teachers College, Columbia University, New York City.

NORTON, ARTHUR O.
Professor of Education, Wellesley College, Wellesley, Mass.

OLIN, ARVIN
Dean, School of Education, University of Kansas, Lawrence, Kan.

OMWAKE, G. L.
President and Professor of Education, Ursinus College, Collegeville, Pa.

O'SHEA, M. V.
Professor and Chairman of the Department of Education, University of Wisconsin, Madison, Wis.

PAKENHAM, WILLIAM
Professor of the History of Education, University of Toronto, Toronto, Canada.

PARKER, SAMUEL CHESTER
Professor of Education and Dean of the College of Education, University of Chicago, Chicago, Ill.

PAYNE, BRUCE R.
President, George Peabody College for Teachers, Nashville, Tenn.

PEARCE, D. W.
Associate Professor of Education, University of Maine, Orono, Me.

PHELAN, W. W.
Director of the School of Education, University of Oklahoma, Norman, Okla.

RADOSAVLJEVICH, PAUL R.
Assistant Professor of Experimental Pedagogy, New York University, New York City.

RALL, EDWARD E.
Professor of Education, University of Tennessee, Knoxville, Tenn.

REISNER, E. H.
Associate Professor of Education, Kansas State Agricultural College, Manhattan, Kan.

RHOADS, MCHENRY
Professor of Secondary Education, State University, Lexington, Ky.

RHOTON, A. L.
Professor of Education, Georgetown College, Georgetown, Ky.

ROBERTS, GEORGE L.
Professor of Education, Purdue University, Lafayette, Ind.

ROBERTSON, C. B.
Director of University Extension and Professor of Secondary Education, University of Pittsburgh, Pittsburgh, Pa.

ROGERS, LESTER B.
Professor of Education, Lawrence College, Appleton, Wis.

RUEDIGER, W. C.
Professor of Educational Psychology and Dean of Teachers College, George Washington University, Washington, D.C.

RUSSELL, JAMES E.
Dean, Teachers College, Columbia University, New York City.

RUSSELL, W. F.
Associate Professor of Secondary Education, George Peabody College for Teachers, Nashville, Tenn.

SACHS, JULIUS
Professor of Secondary Education, Teachers College, Columbia University, New York City.

SARGENT, WALTER
Professor of Aesthetic and Industrial Education, University of Chicago, Chicago, Ill.

SEARS, J. B.
Assistant Professor of Education, Leland Stanford Junior University, Stanford University, Cal.

SELVIDGE, R. W.
Professor of Manual Arts, George Peabody College for Teachers, Nashville, Tenn.

SHELDON, H. D.
Professor of History of Education, University of Pittsburgh, Pittsburgh, Pa.

SIES, RAYMOND W.
Professor of Education Administration, University of Pittsburgh, Pittsburgh, Pa.

SMITH, MARY SHANNON
Professor of Education, Meredith College, Raleigh, N.C.

STEWART, ROLLAND M.
Assistant Professor of Education, State University of Iowa, Iowa City, Ia.

STORM, A. V.
Professor of Agricultural Education, University of Minnesota, Minneapolis, Minn.

STOWE, A. MONROE
Professor of Education, Toledo University, Toledo, Ohio.

STRAYER, G. D.
Professor of Educational Administration, Teachers College, Columbia University, New York City.

STREET, JACOB R.
Dean, Teachers College, Syracuse University, Syracuse, N.Y.

STRONG, E. K., JR.
Professor of Psychology and the Psychology of Education, George Peabody College for Teachers, Nashville, Tenn.

SUTTON, WILLIAM SENECA
Dean of the Department of Education and Professor of Educational Administration, University of Texas, Austin, Tex.

SUZZALLO, HENRY
Professor of the Philosophy of Education, Teachers College, Columbia University, New York City.

SWIFT, EDGAR JAMES
Professor of Psychology and Education, Washington University, St. Louis, Mo.

SWIFT, FLETCHER H.
Professor of Education, University of Minnesota, Minneapolis, Minn.

TERMAN, LEWIS M.
Associate Professor of Education, Leland Stanford Junior University, Stanford University, Cal.

THOMAS, WINFIELD S.
Professor of Education, University of California, Berkeley, Cal.

THOMPSON, FRANK E.
Professor of Education, University of Colorado, Boulder, Colo.

THORNDIKE, EDWARD L.
Professor of Educational Psychology, Teachers College, Columbia University, New York City.

TUFTS, JAMES H.
Professor of Philosophy, University of Chicago, Chicago, Ill.

UPDEGRAFF, HARLAN
Professor of Educational Administration, University of Pennsylvania, Philadelphia, Pa.

WALLIN, J. E.
Director of the Psycho-educational Clinic, St. Louis Public Schools, and Lecturer in the Extension Department, Harris Teachers College, St. Louis, Mo.

WARDLAW, PATTERSON
Professor of Pedagogy, University of South Carolina, Columbia, S.C.

WEBER, S. E.
Dean of the College of Liberal Arts, Professor of Education, and Director of the Summer Session, Pennsylvania State College, State College, Pa.

WEEKS, ARLAND D.
Professor of Education, North Dakota Agricultural College, Agricultural College, N.D.

WEST, HENRY S.
Professor of Secondary Education and Director of School Affiliation, University of Cincinnati, Cincinnati, Ohio.

WHITNEY, A. S.
Professor of Education, University of Michigan, Ann Arbor, Mich.

WILLIAMS, CHARLES HAMILTON
Director of Extension Work, University of Missouri, Columbia, Mo.

WILLIAMS, HENRY G.
Dean of the State Normal College, Ohio University, Athens, Ohio.

WILLIAMS, L. A.
Professor of School Administration, University of North Carolina, Chapel Hill, N.C.

WILSON, G. M.
Director of Education, State Agricultural College, Ames, Ia.

WOOFTER, T. J.
Dean, School of Education, University of Georgia, Athens, Ga.

YOCUM, A. DUNCAN
Professor of Pedagogy, University of Pennsylvania, Philadelphia, Pa.

EDUCATIONAL NEWS AND EDITORIAL COMMENT

Program of Department of Superintendence

Cincinnati, Ohio, February 22–27, 1915

Headquarters at Hotels Gibson and Sinton

President—Henry Snyder, superintendent of schools, Jersey City, New Jersey.

First Vice-President—Paul W. Horn, superintendent of schools, Houston, Texas.

Second Vice-President—E. C. Warriner, superintendent of schools, Saginaw, Michigan.

Secretary—Mrs. Ellor C. Ripley, assistant superintendent of schools, Boston, Massachusetts.

First Session

Invocation.
Address of Welcome.
Response.
(Program to be completed later.)

Second Session

The Protection of Professional Interests.
Schoolbooks—Educationally, Commercially, Politically.
The Training of Teachers.

a) The Normal School.
b) The Training of Rural Teachers.
c) The Training of Teachers in Service.
d) The Training of Superintendents.

Vocational Education.

a) A State School System for Industrial and Social Efficiency.

Third Session

Vocational Education (*Continued*).

b) The Evolution of the Training of the Worker in Industry.
c) The Study of Occupations as a Part of the Program of Vocational Education.
d) Continuation School Work.
e) Vocational Training for Women.
f) The Educational Field for the All-Day Trade School.
g) The Field for the Corporation School and Its Relation to the Public Schools.
h) National Aid for Vocational Education.

Fourth Session

Program to be announced hereafter.

Fifth Session

School Curricula and Organization.

a) Principles Underlying the Determination of a Course of Study.
b) Should Essentials of a Course of Study Vary to Satisfy Social Demands in Different School Districts? Within the Same District?
c) The Demands of Rural-School Districts.
d) The Six-and-Six Plan.
e) The Pros and Cons of the Gary System.
f) Results of Plans to Measure Efficiency in Teaching.

Report of the Committee on Economy of Time in Education.

a) Minimum Essentials of a Course of Study—The Objectives and Guiding Principles of the Report.

Sixth Session

Round Tables

A. State and County Superintendents.
State School Codes.
Legislative Provisions for:
a) Financial Support of the Public Schools.
b) The Appointment, Salary, and Tenure of Teachers.
c) The Selection of County Superintendents.
d) The Determination of the School District.
e) The Supervision of Rural Schools.

B. Superintendents of Cities over 250,000.
The Essence of Success in Evening Vocational Work.
Illiteracy and Industrial Efficiency.
The Education of Adult Immigrants.

C. Superintendents of Cities between 25,000 and 250,000.
Current Methods of Dealing with the Exceptional Pupil.
a) The Backward Pupil.
b) The Mentally Defective Pupil.
c) The Bright Pupil.
d) The Delinquent Pupil.
e) The Anemic Pupil.

D. Superintendents of Cities under 25,000.
Current Practices in the Appointment of Teachers.
How Shall the Efficiency of Teachers Be Tested and Recorded?
The Promotion of Teachers on the Basis of Merit and Efficiency.
A Satisfactory Basis for the Promotion of Pupils.

E. General—Child Relations.
The Administration of Compulsory Education Laws.
The Issuance of Work Permits and Its Bearing on Other School Problems.
The Taking of the School Census.

SEVENTH SESSION

Report of the Committee on Economy of Time in Education.

a) Minimum Essentials of a Course of Study (*Continued*).
b) Language and Grammar.
c) Arithmetic.
d) History and Geography.
e) Typical Progressive Experiments.

EIGHTH SESSION

The Investigation of the Efficiency of Schools and School Systems.

THURSDAY EVENING

May Festival Concert, given by the May Festival Association and the Symphony Orchestra Association.

Other conferences, outside the general convention, will be as follows: National Society for the Study of Education; Society of College Teachers of Education; National Committee on Agricultural Education; Educational Press Association of America; American School Peace League; Conference of Teachers of Education in State Universities; Association of State Superintendents; National Council of Teachers of English; City Normal-School Association; International Kindergarten Union; National Congress of Mothers and Parent-Teachers' Associations; School Garden Association of America; State High-School Inspectors' Association; National Association of State Supervisors and Inspectors of Rural Schools; National Association of Teachers' Agencies.

COMMISSION ON THE REORGANIZATION OF SECONDARY EDUCATION

The meetings of this commission, to be held in Cincinnati on February 24, 25, and 26, promise to be of special importance for superintendents and principals.

A MEETING OF THE CHICAGO BOARD OF EDUCATION

(Extract from the Official Report)

MR. JACOB M. LOEB presiding as chairman.

THE CHAIRMAN: The Board will now come to order and the Secretary will call the roll.

THE SECRETARY (*calling the roll*):

Mr. Peterson,
Mrs. MacMahon,
Mrs. Britton,

Mrs. Vosbrink,
Mr. Lipski,
Dr. Warning,
Mr. Roulston,
Mr. Sonsteby,

MR. SONSTEBY: Mr. Chairman, I suggest that the Secretary call the roll in order.

THE SECRETARY (*continuing*):

Mr. Rothman,
Mr. Otis,
Dr. Pietrowicz,
Mr. Metz,
Mr. Eckhart,
Mr. Holpuch,
Mrs. Gallagher,
Mrs. Sethness,
Mr. Reinberg,
Mr. Collins,
Mr. Loeb.

THE CHAIRMAN: How many present?

MR. SONSTEBY: Mr. Chairman.

THE SECRETARY: There are seventeen members present.

MR. SONSTEBY: I suggest that the Secretary call the roll as it is printed there and not skip around as he is doing. What is the purpose of this? By the orders of the President?

THE CHAIRMAN: Yes.

MR. SONSTEBY: The President has no such authority, and there is a rule in regard to the roll call for you to follow and it has never been changed here.

THE CHAIRMAN: The Chair rules that he has the authority to change the order.

MR. SONSTEBY: You have no such authority.

THE CHAIRMAN: You know what recourse you have and you may follow it if you wish.

MR. SONSTEBY: I certainly will follow that and appeal from the rule of the Chair.

MR. ROTHMAN: I second the appeal from the Chair.

THE CHAIRMAN: There are certain reasons for the calling of the roll in this way. Mr. Collins is a candidate for the presidency and his name heads the list, and I thought, to save him some embarrassment,

we would put him at the foot of the roll. Now we will have a vote on the appeal.

And so forth.

What Would-Be Teachers Know

That a thorough knowledge of the subject-matter of the courses he is to teach is the first requisite of any teacher, no one can dispute. This platitude gains interest in view of the fact that out of 247 high-school graduates who, in December, took the examination provided for public-school teachers in Cook County (Illinois), 212 failed to reach the passing grade of 75. The candidates included graduates of parochial high schools, of state normal schools, of colleges, and universities. Some of the answers given by candidates are enumerated by the *Chicago Tribune*. Incidentally, they furnish a fine foil to the lists of funny answers by pupils with which teachers from time to time regale the press:

Gibraltar is located in various parts of the world; it is a strait attached to the southern end of South America; it separates the Black Sea from the Mediterranean; it is a strait on the coast of Italy; it is a large fort at the southern extreme part of South America; it is south of Austria, in Russia, and separates North and South America.

The Klondike is a river in Holland—as one might conclude from the fact that Holland is full of dikes.

Sardinia, contrary to the generally accepted theory, is a Turkish stronghold on the island of Sicily; it seems also to be a city in Norway.

Tasmania, one is interested to learn, is the vast plains of Persia; it is a city in Mexico, and, to be more exact, a large town in Southeast Africa, as well as a province near Turkey.

Various candidates, asked to name ten states bordering on the Missouri and to give the chief agricultural products of each, answered as follows:

Idaho, famed for its wheat; South Dakota, the chief agricultural product of which is cotton; Main, which raised large crops of iron and of which the capital is Augustus; Georgia, which produces turpentine as its chief farm crop; Colorado, whose farmers specialize in gold; and Arizo-nia, whose chief product is alfalfa. Florida had also been dragged bodily from its summer seas to border Missouri on the south, and Louisianna has not been forgotten.

What would-be teachers know about themselves may be inferred by their answers on certain points of physiology:

The dermis is one of the muscles of the brain.

The chief constituents of the blood are arteries and veins.

Olfactory is the making or founding of the oleo.

The trachea is a lump which is formed in the neck and is known as the Adam's apple.

Cartilage is a small compartment where blood corpuscles are stored.

Bile is the covering of the bones.

Reflex action is the act of light being reflected from a mirror.

Question: Define the term proteid.

Answer: The proteid is an important part of the body where the straches are stored.

Proteid is one of the glands.

Proteids are cells formed in the epidermis of the skin.

Proteid is a form of marrow of which everybody must have a certain portion.

Question: Define voluntary and involuntary muscles.

Answers: Voluntary muscles are those in the lower leg and forearm.

Involuntary muscles are those under the skin.

Voluntary muscles make the arm bend forward. Involuntary muscles make the arm bend backward.

State Boards of Control

Illinois, Washington, and Wisconsin are agitating the question of state control of education. In each of these states the issue is the same: Shall one central state board direct the activities of all the state institutions of learning? In Washington it is proposed to amalgamate into one organization the five boards of control for the university, the state college, and the three normal schools. In Illinois there are at present no less than twelve separate state boards and officers whose functions have to deal with education and whose jurisdictions are substantially independent of each other. This looks like a case in which to abolish the unnecessary division of authority, to concentrate duties in a single governing body, and to give a central aim to state education would produce economy in management. As in Washington, each Illinois normal school has a separate governing board.

In Wisconsin the system is not quite so archaic. The State Board of the Normal School Regents directs the activities of the nine normal schools; one member of the board is appointed from each city in which a normal school is located. The Board of University Regents is entirely independent of this body.

The report of the Efficiency Committee of the Illinois legislature recommends that for the hodgepodge boards in this state there be substituted a single state board of education, consisting of the state

superintendent of education, the president of the University of Illinois, a representative from each normal school, and two unpaid members to be appointed by the governor. This board would have general powers of supervision over all the state institutions of learning. The committee proposes to create for the convenience of the normal schools a single board. Similarly it is proposed to reorganize the Board of Trustees of the state university, so that "it shall consist of the state superintendent of public instruction and eight unpaid members to be appointed by the governor, no one of whom is to be a resident of the county in which a normal school is located."

In this case the merit of the reform is obvious. As the committee asserted, it is impossible under present conditions to secure adequate co-ordination among the educational institutions of the state. However the committee is not so radical as it might be, since it proposes to substitute for the present division of authority, not one board, but three. "Several considerations," the committee says, "seem to make it inadvisable to urge at this time a complete centralization of the educational authorities in Illinois. The constitutional provision requiring a public election of the state superintendent of public instruction stands in the way of a satisfactory method for selecting the executive head for such an organization." It is perhaps fortunate that this is the case.

Victory for the Mother-Teacher

The decision by Commissioner John H. Finley of New York is something of a victory, if no more than a sentimental one, for the mothers teaching in the public schools. Mr. Finley ruled that a teacher may not be dismissed because she absents herself from the public schools to bear a child. His conclusion was:

> The Board should have accepted the natural corollary of its policy, voluntary or enforced, of employing or retaining married women teachers, and should have given at least as favorable consideration to an absence for childbirth, as is normally given to absences asked for reasons of personal convenience, for minor or grave illness, or for purposes of study and travel, or of improving the health. . . . . It is difficult to conceive how a reasonable, unwilful absence, due to natural causes, should be construed as a neglect of duty; and it is difficult to understand why an absence for the most creditable social reason should be so treated.

Commissioner Finley might perhaps have added that so far as a personal attitude toward pupils is concerned, absence for such a reason may very possibly result in as much gain to the schools as absence for study or travel.

GRUNDTVIGISM

Excellent and necessary as the scientific study of education is, it none the less requires an occasional corrective. The business of training children is not altogether a business of Binet tests and averages of intelligence and statistical studies, as the most ardent counter of figures will admit. We were far out at sea before we started counting the number of children with this peculiarity and that in the public schools, but we should be equally adrift if we were to do nothing but study scientifically this strangely human business. Hence it is refreshing now and then to look up from the long rows of tables and the educational reports at the compelling figure of a human being.

Three times this last month there came such glimpses. These were the articles in the *Educational Review* for December, a bulletin or two of the United States Bureau of Education on Danish folk schools, and sundry press notices from that same origin. All three dealt with the work of one Bishop Grundtvig for the schools of Denmark.

The Danish folk high schools have been dealt with heretofore; what interests us now is Bishop Grundtvig. We ventured to think that we might prove example and precept for the writers of so many educational Jeremiads as to how to reform a nation. Let us forget the Danish high schools, then, and look at the man: he will remind us of things we might otherwise forget.

Here was a soul in littlest Denmark, a rugged, forceful, deep-thinking, little-speaking kind of man, who stopped not to consider how bad things were but how good they might become. Here was a spirit big enough to sit brooding over a nation until beneath him a whole educational system from kindergarten to university took shape and was. There was something elemental and cosmic about such a transformation, something fine in the courage which proposed, quite simply, to overthrow the false in education, though it be nation-wide and century-deep, and to build up the true in education in its stead. Carlyle would have liked him; Emerson would have proclaimed him a prophet. Education, no less than politics, may have its heroes and hero-worship.

The example of this patientest, kindly, struggling clergyman leads us to suggest that there is something needed in the American system as well as in Denmark. We see in him the lost art of affirmation. For as Chesterton says, in our countings of questionnaires, we are become so mortally afraid of being wrong, that we dare not, or cannot, be right. Is there no room in the American system for the positivism of Bishop Grundtvig? Perhaps we have gone a little too far in the counting of

questionnaires; perhaps, after all, it is simpler to reform a national system than to count the averages of a history class!

This is all very vague, indeed—and yet! Until all of our state superintendencies, for instance, are made something else than the ragtag and bobtail of political conventions; until the incumbent becomes some such positive, driving, kindly, human force as Bishop Grundtvig, we may despair of any such splendid result as the Danish system. Until our city principals are a little less hampered by citizen school boards' red tape and are permitted to teach scholars more and write reports less, we shall never completely find out what is wrong with American education, though we count questionnaires forever.

Questionnaires and Grundtvigism—they are by no means antagonistic! They pair together very well, indeed! Let us be thankful for all we have learned from questionnaires, but let us also pray for a slight infusion of Grundtvigism, which we take to be the art of affirmation, the wisdom of being right in the main.

H. M. J.

An Experiment in Higher Education

President Foster's article (p. 97) on the aim and scope of Reed College, Portland, Oregon, describes one of our most significant experiments. Starting with a liberal endowment, a college is developing, devoted solely to a liberal education which is regarded as the best foundation for professional careers. It includes no other departments. Reed College presents, besides, other interesting features.

1. The members of the faculty literally live with the students in all the activities of college life.

2. Since there are no fraternities or sororities, social affairs are rigidly subordinated to the main purpose of the institution.

3. Money cannot purchase for any student better living accommodations than are provided for all.

4. Admission is conditioned on the usual requirements, plus "evidence of good character, earnestness of purpose, intellectual enthusiasm, and qualities of leadership." These qualifications are determined by a personal interview of the president with each applicant, and by mental tests given in the department of psychology. The department of physical education gives an examination as the basis of necessary development.

5. Government of the students is in the hands of a "student council."

6. Requirements for graduation are not fixed in units. Credit is given for quality as well as quantity of work. There is no reporting of grades in courses. Each major subject has an oral examination.

COMMUNICATIONS

General Science or Special Science

Substituting the Encyclopedic for the Educative?[1]

To the Editor:

The issues raised in the last number of the *School Review* by the two articles on general science and the editorial comment thereon are of such importance in the pending organization of the science curriculum of the high school as to demand the attention of all who are interested in secondary science instruction. There has long been a conviction on the part of many students of secondary education that the existing organization of the special sciences is such as to defeat the best uses of science in high-school education. The difficulty is greatest in the earlier years when too often facts are learned by rote and there is entire failure to appreciate scientific methods. Furthermore, recognition of principles is impossible without some personal acquaintance with the methods by which principles are developed.

In many parts of the United States high-school science teachers with training in science, and with a genuine desire to use science for the best education of high-school pupils, have been trying to use their scientific method, not only in dealing with the objects of nature about which they give instruction, but also in studying their pupils and in experimentation with different types of organization of science for first-year work. The fact that these experiments have been of different nature is not evidence of choas, but evidence that real experimentation is going on and that the different possible ways of securing the desired results are being tried. What scientist can object to such a procedure? Indeed, it may finally be shown that several types of organization are good, one in one school, another elsewhere. There are few really worthwhile centers of learning which have but one road leading to them. Indeed, an objective point toward which but a single road may lead is likely to be an obscure terminus suitable for secluded vacation from productive human activities, but not suitable for our social and intellectual relations with men. A brief look at an experiment in teaching first-year science may seem to present a chaotic view to one who does

[1] See the *School Review*, January, 1915, p. 43.

not understand the purpose and plan of procedure of the high-school teacher, just as a view of the highly differentiated set of courses of a university department may seem chaotic to one uninformed in the subject, or as the internal workings of a great manufacturing plant may seem chaotic to those who do not study the plan of work long enough to see the materials, processes, and products that are involved.

The unity of general science must be secured through continuity of method and coherence of the topics which compose the outline of the course. From the pupils' point of view this is a true and appreciated unity, a truer unity, so far as the pupil is concerned, than sometimes is presented in the plan of unity of a specialized science.

The accusation that general science is encyclopedic is true in the sense that it attempts to include a measure of scientific information which seems to be appealing and worth while to young learners. It is certainly hoped that general science, and all science, will leave pupils in possession of valuable information—certainly no virtue attaches to the absence of such information. It is equally clear in the minds of teachers of general science that the really educative processes which science should carry out are best developed when the learner has the sort of dynamic attitude that accompanies a feeling that the work in hand is worth while for him. Information in science does not find its chief foundation in the fact that it brings a valuable tangible return to the pupil in the form of a better livelihood, but in the fact that by furnishing him a dynamic purpose for working he works more intelligently and more efficiently, and consequently is better educated thereby. Science should give information which enables people to live better, but it should give training which makes a still larger contribution to proper living. Then, if the accusation of being encyclopedic is to be urged, it may be safely asserted that general science is certainly less encyclopedic to first-year high-school pupils than is the formal science which they have so generally been asked to learn.

The limits of this brief editorial response are such that certain specific data bearing upon general science cannot be presented here, but this will appear in a later issue of the *School Review*.

OTIS W. CALDWELL

UNIVERSITY OF CHICAGO

BOOK REVIEWS

A Practical Chemistry for High School Students. By CHARLES G. COOK. New York: D. Appleton & Co., 1914. Pp. xiii+366. Cloth.

The author states that the "book is intended for students of the second year in the high school. Its purpose is to bring the pupil into closer contact with the things of everyday life, to give him an insight into the nature of those chemical processes with which all of us come more or less in contact, to furnish him with some chemical knowledge of the things for his health and comfort and thus better adjust him to his environment."

The subject-matter is treated in twenty-four chapters as follows: introduction; water; oxygen; hydrogen; acids, bases, and salts; atoms, symbols, formulae, and equations; salt; the air; carbon and fuels; flames; phosphorus and matches; sulphur and some of its compounds; compounds of nitrogen and explosives; fertilizers; food; some familiar compounds used in medicine; fibers; cleaning-materials; building-materials; alloys; metals used for plating and decorating; glass and pottery; paints; photography. The appendix contains experiments for demonstration and laboratory exercises, also a chapter on chemical arithmetic.

The author has clearly endeavored to break away from the usual methods of teaching chemistry to high-school students, and this is commendable, for the usual high-school books on chemistry are miniature college texts. The presentation is largely descriptive and no attempt has been made to treat the subject theoretically. This is in the right direction. But six pages are devoted to the atomic theory and formulation. It is doubtful, however, whether this is at all sufficient to enable the student to read the succeeding chapters intelligently. It is certainly inadequate for handling the problems in the appendix.

The explanations given are unfortunately not always clear or accurate. Furthermore, theoretical views are at times introduced in explanations before the theories are presented. So while the theoretical chapter begins on p. 41, we already find molecules mentioned on p. 7 in connection with the subject of solution. Indeed, even phases of the kinetic theory of gases are used here in an attempt to explain the phenomena of the solution of gases in water. The statement so confidently made on p. 8, that water is the best solvent known and that it will dissolve the greatest number of substances, may well be challenged.

On the whole, however, the treatment is such that with the aid of a good teacher the pupil will derive much benefit from a careful study of the book. The summaries and review questions at the end of each chapter are specially

helpful to a student of high-school age. The author writes in an enthusiastic vein and shows that he is interested, not only in his subject, but also in bringing it home to his pupils. The volume cannot serve as a text for a course in elementary chemistry in preparation for college, so that the basal college course can be omitted as is at times done. Nevertheless, for the large number of students who never enter college this book is doubtless better than the usual texts, for it gives much useful practical information that the pupil needs and would not get otherwise.

The book is well printed on good paper. The cloth binding is neat. With the exception of some of the line drawings, the illustrations are good.

LOUIS KAHLENBERG

UNIVERSITY OF WISCONSIN

The Next Generation. A Study in the Physiology of Inheritance. By FRANCES GULICK JEWETT. Boston: Ginn & Co., 1914. Pp. xii +235.

This interesting little book attempts to correlate the more technical results which have been obtained in more recent years in a number of related biological sciences, and, furthermore, the author has attempted to popularize these results in such a way as to make them intelligible and practically useful for the enlightenment and instruction of the young. There can be no doubt of the importance of such an attempt. The biological sciences undoubtedly have an important message for the social sciences, including education. Mrs. Jewett has attempted to express this message in a suitable form for children of the adolescent period. The reviewer has nothing but commendation for this concept of the mission of the biological sciences. The actual execution of her task, however, is open to criticism at a number of points.

The content of the book may be sufficiently indicated by the titles of some of the chapters. The first is "Fathers, Mothers, and Children"; the second, "Andalusian Paths"; the third, "When Characters Are Combined." Then follow "Mendel and His Garden Piece"; "Laws of Inheritance Put to Use"; "Evolution of the Horse"; "A Few of Darwin's Facts"; "Darwin's Problem"; "Five Links to the Chain"; "Evidences of Evolution"; "Acquired Characters and Mutations"; "Changed Environment for Leptinotarsa"; "New Species through Changed Environment"; "Beginnings of the Next Generation"; "The Marvel of Growth"; "Germ Cells Damaged by Alcohol"; "From Fourteen to Twenty"; "Nicotine and Adolescence"; "Alcohol as a Beverage"; "The Ground of Evolution"; "Family Responsibility"; "Protect the Stream of Life"; "Prevention of Blindness"; "Safety from Feeble-Mindedness"; "Overwork for Children One Hundred Years Ago and Now"; "Three Steps in Race Improvement"; "The Final Step, or Race Regeneration."

Then follows a list of questions, the whole covering several pages, devoted to the facts cited in the various chapters. This feature of the book suggests

that the author had in mind the needs of elementary students and teachers in courses generally designated "sex hygiene."

The copy supplied to the reviewer was accompanied by a small pamphlet of nine pages entitled *Supplement to The Next Generation. By Frances Gulick Jewett.* This supplement contains information with regard to infections by syphilis and also a section entitled "Advice for Girls." Just why the information contained in this pamphlet should not have been published in the text of the book does not appear. In view of the somewhat veiled and guarded mode of expression of the author, one is led to infer that she does not believe in calling a spade a spade. From the standpoint of the reviewer the reticence of the author emanates from a feeling of false modesty which is deeply injurious to the cause that she undoubtedly has at heart, namely, race improvement. Her book undoubtedly will serve a useful purpose. In the opinion of the reviewer, however, it suffers from the fact that the author has failed to distinguish between the field of preventive medicine and the propaganda of eugenics. The facts upon which social prophylaxis rests are sound and well established. The facts upon which the eugenics propaganda rests are still insecure and problematical. Much harm is done to the cause of social hygiene by the confusion of the eugenics program with the program of preventive medicine. In an elementary book of this sort there is no occasion to introduce theoretical considerations.

H. C. STEVENS

UNIVERSITY OF CHICAGO

A Cyclopedia of Education. Vol. V. Pol–Zwi. Edited by PAUL MONROE. New York: Macmillan, 1913. Pp. xiii+892. $5.00.

The general comments made on the earlier volumes of this great work apply with equal justice to this the final one. No greater or more important undertaking in educational writing has probably ever been planned, much less carried through to successful completion, than this. Its conciseness and its simplicity of style as well as its breadth of content render it valuable for the beginner in the teaching profession and indispensable to the specialist.

Among the articles of special interest the reviewer has noted the following as indicative to some extent of its scope of material: "Private Schools," "Psychology," "Educational Psychology," "Punishment," "Teaching of Reading," "Sunday Schools," "The Recitation," "Special Classes," "Supernormal Children," "Supervision of Teaching," "Appointment of Teachers," "Teachers' Voluntary Associations," "Technical Education," etc.

The special articles on various phases of school hygiene and on national and state systems of education, educational history, and biography, which were distinguishing features of previous volumes, continue in this.

The elaborate analytical indexes at the close of this volume very greatly enhance the value of the *Cyclopedia* as a reference work.

IRVING KING

STATE UNIVERSITY OF IOWA

A Hand Book of Vocational Education. By A. H. TAYLOR. New York: Macmillan, 1914. Pp. 225. $1.00.

We believe this to be a useful book for students of the subject of vocational education. It is informational in nature and is generally accurate, though, covering such a wide range as it does, it is at times superficial.

The author seeks to give a survey of the general field of vocational education, emphasizing the philosophical and historical aspects of the subject. He says: "A vast body of material has been accumulated, but it lies scattered in magazines and monographs printed in many languages. This hand book is a digest of some of the most important of this literature." Most of the material from which the author has drawn is easily accessible to students of the subject, but the convenience of having it gathered within a single volume is not to be questioned.

On the whole the facts presented are wisely chosen, well organized, and interestingly set forth, though we believe that undue emphasis is given to the various European systems of vocational education which are discussed at some length, the author pointing out certain pertinent lessons which he believes that the United States should learn from them. He gives relatively little attention to the significance of recent American progress in vocational education and draws his illustrative material from a limited geographical area.

FRANK M. LEAVITT

UNIVERSITY OF CHICAGO

High School Courses of Study. By CALVIN O. DAVIS. (School Efficiency Series.) Yonkers-on-Hudson, N.Y.: World Book Co., 1914. Pp. xi+166. $1.50.

The plan of the book consists of a theoretical formulation of, first, the aims of secondary education; second, the reorganization of courses and administration necessary to secure those aims; and third, an evaluation of the subjects of study for those purposes. Then follows a brief analysis of the high-school courses of ten large cities, for the purpose of showing present tendencies in curriculum-making in cities most nearly comparable to New York City. With the standards, theoretical and practical, thus set up, the courses of New York City are surveyed. Finally, the criticisms and recommendations submitted to the Committee on School Inquiry, relative to the organization of the courses, are included.

This book is chiefly for the administrator. The things of most value in it are the comparisons of the course of New York City with those of other cities, especially the percentage tables showing intensiveness, flexibility, prescriptions for graduation, prescriptions by departments and subjects, and prescriptions by years. Chap. x, which includes a discussion of the criticisms and recommendations submitted, is extremely suggestive. The chief adverse criticism on the book is the fact that a third of it is of particular and not of general interest.

D. W. HORTON

MISHAWAKA, INDIANA

BOOK-NOTES

PUFFER, J. ADAMS. *Vocational Guidance.* Chicago: Rand McNally & Co., Pp. 294. Illustrated.

That children need vocational as well as other forms of guidance is readily admitted by all. It should not require three hundred pages to make this clear to the average teacher. Unfortunately Mr. Puffer seems to feel that vocational guidance is something new and unheard of in the field of education, and, therefore, it is necessary to launch out on a campaign for its introduction. He may be right. However, the book which he has written fails to tell the average teacher how to organize vocational guidance in connection with her pupils. The book is very well written in a simple and direct style apparently with the purpose of popularizing the subject. But it does not tell one how to organize and administer vocational guidance in small communities. What is needed now in this newer field is three hundred pages of directions telling *how* to introduce the work successfully.

HILL, MABEL. *The Teaching of Civics.* (Riverside Educational Monographs.) Boston: Houghton Mifflin Co., 1914. Pp. x+146. $0.60.

The latest of the Riverside Educational Monographs, on the purpose and method of civics instruction in our public schools, is undoubtedly the outgrowth of a practical pedagogical experience. The first 28 pages of the 139 in the text announce the author's basic principles. "Good citizenship cannot be reached through glittering generalities as to loyalty to country," but it must come through awakening the spirit of co-operation by bringing the pupils into intimate contact with concrete civic problems. We are warned against the memorizing of a "dreary array of words" describing the organism and functions of government. The method of attack should be inductive. The teacher is to make every effort to develop foundation habits of good citizenship in work and play.

The author reiterates a truism too frequently forgotten by teachers: "A preparation for social and political duties includes a constant teaching of ethics."

In the second part are suggested 24 practical lessons in applied civics. These cover such subjects as community health, immigration, public utilities, etc. The essons culminate in the framework and functions of the state.

It is a significant fact that a woman should be a pioneer in the teaching of civic responsibility.

SMALL, WALTER HERBERT. *Early New England Schools.* Boston: Ginn & Co., 1914. Pp. 401. $2.00.

Early New England Schools is an exceedingly valuable contribution to the history of American education. It furnishes many concrete instances illustrative of the school practices of Colonial New England, presented in the forceful, if somewhat rugged, style of Mr. Small, with copious quotations from original sources.

The work is intended as a sourcebook rather than a history of education, but the material is organized in such a way that it gives the best outline we have of the colonial

schools of New England. The historical value of the study would have been greatly increased if the sources of important quotations had been more definitely indicated.

This book represents the type of study that must be made of the schools of other sections of the country before we can have an adequate history of education in America.

VINCENT, H. D. *Vocational Arithmetic.* Boston: Houghton Mifflin Co., 1914. Pp. 126. $0.55.

A somewhat elementary attempt to combine arithmetic, spelling, and business forms. The book is "vocational" only in so far as it deals with some 68 occupations, each of which is assigned a lesson. There are 100 lessons in all. The opponent of vocational education will find plenty of ammunition in the heterogeneous list of occupations chosen: livery business, shoe-shining, the Chinese laundry, garbage collecting, wood-sawing, landscape gardening are a few of the most amusing. It is these topics which make the book "vocational."

JELLIFFE, R. A. *A Handbook of Exposition.* New York: Macmillan, 1914. Pp. viii+222. $0.90.

A selection of material intended to illustrate the best expository models. An introduction of 16 pages discusses the writing of a composition, amplification, and analysis of models. The author attempts to point out definitively what the pupil should gain from each model in the book.

D. O. C.

BOGART, E. D., and THOMPSON, C. M. *Exercise Book in Economic History of the United States.* New York: Longmans, Green & Co., 1914. Pp. 63. $0.50.

A book of charts and outline maps to be filled in by college students. Directions for each are given, reading-references appended, and each task is made to suggest topics for written work. Of possible service in advanced high schools.

HANMER, Lee F., and PERRY, CLARENCE ARTHUR. *Recreation in Springfield, Illinois.* New York: Department of Recreation, Russell Sage Foundation, 1914. Pp. 133. $0.25.

Part of the Springfield Survey. Discusses all of the present aspects of recreation in Springfield and lays down a program for the future. Thorough, like all the publications of the Sage Foundation. Illustrated. Paper binding.

HARDY, ASHLEY K. (editor). *Wildenbruch's "Das edle Blut."* New York: Henry Holt & Co., 1914. Pp. viii+112. $0.35.

Wildenbruch's trifle on German school life made into a text by the addition of an introduction, exercises, notes, and vocabulary. Will a healthy American high-school student react very favorably toward this ultra-pathetic tale of "das kleine L."?

Latin and Greek in Education. University of Colorado Bulletin, Vol. XIV, No. 9. Boulder, Colo., 1914. Pp. 37.

Nine pithy articles setting forth the need of classical training for the general student, the scientist, the scholar in literature, the engineer, the lawyer, the philosopher, and the biologist.

HARRISON, E. STANLEY (editor). *A Spanish Commercial Reader.* Boston: Ginn & Co., 1914. Pp. 238. With notes and vocabulary. $0.90.

A business-like reader purporting to make the student familiar with business terms in Spanish countries. The articles deal with trade, the history of commerce, office equipment, etc. Business forms in Spanish are included.

FOGHT, H. W. *Danish Elementary Rural Schools with Some Reference to Seminaries for the Training of Rural Teachers.* U.S. Bureau of Education Bulletin, 1914, No. 24. Whole No. 598. Washington: Government Printing Office, 1914. Pp. 45+iv. $0.10.

A thorough, if brief, compendium of information. A companion pamphlet to the author's earlier *The Danish Folk High Schools.* Both of special interest to agricultural high schools.

GOBDES, W. H., and BUSCHEK, H. U. *Deutsche Grammatik. Der grammatische Teil des Sprach- und Lesebuches in deutscher Fassung.* New York: Henry Holt & Co., 1914.

As the title indicates, a reprinting of Part II (pp. 192–276) of the author's larger text. Entirely in German. Paper covers.

WALKLEY, R. L. *Bibliography of the Relation of Secondary Schools to Higher Education.* U.S. Bureau of Education Bulletin, 1914, No. 32. Whole No. 606. Washington: Government Printing Office, 1914, Pp. 57 +iv. $0.10.

Includes everything of importance in the discussion of the subject for the past ten years; before that, only the most accessible material.

BARDEEN, C. W. *The Girl from Girton and Other Stories about Schools.* Syracuse: C. W. Bardeen, 1914. Pp. 234+xxxii.

Mediocre fiction about school-teachers—to be taken *cum grano salis.*

LAW, FREDERICK HOUK (editor). *Tales and Poems by Edgar Allan Poe.* With an introduction and notes. New York: Charles E. Merrill Co., 1914. Pp. 323. Illustrated. $0.40.

Twelve tales and eleven poems are selected. The introduction and notes are gratefully brief.

CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS[1]

IRENE WARREN
Librarian, School of Education, University of Chicago

Barber, Fred D. The present status and meaning of general science. School R. 23:9–24. (Ja. '15.)

Bean, Robert Bennett. The eruption of the teeth as a physiological standard for testing development. Pedagog. Sem. 21:596–614. (D. '14.)

Bohn, William E. First steps in verbal expression. Pedagog. Sem. 21:578–95. (D. '14.)

Chapin, Henry Dwight. What animal experimentation has done for children. Pop. Sci. Mo. 86:55–62. (Ja. '15.)

Cooper, Lane. The teaching of English and the study of the classics. Educa. R. 49:37–47. (Ja. '15.)

Coulter, John M. The mission of science in education. School R. 23:1–8. (Ja. '15.)

Coursault, Jesse H. Standardizing the junior college. Educa. R. 49:56–62. (Ja. '15.)

Cutten George B. Moral influence of the curriculum. Relig. Educa. 9:520–27. (D. '14.)

Dodd, Alvin E., and Bawden, William T. Report on a plan for an elementary industrial school in the city of Richmond, Virginia. Man. Train. M. 16:271–77. (Ja. '15.)

Eckels, George H. The place of mathematics in the high school curriculum. Am. School Bd. J. 49:21, 58–59. (D. '14.)

Engleman, J. O. A survey of entrance requirements and recent tendencies in the courses of study of the normal schools of the United States. Pedagog. Sem. 21:532–58. (D. '14.)

Fitzpatrick, Frank A. The development of the course of study in American schools. Educa. R. 49:1–19. (Ja. '15.)

Hasty, Philip S. The present status of vocational work in the elementary school. II. Man. Train. M. 16:208–13. (D. '14.)

[1] *Abbreviations.*—Am. School Bd. J., American School Board Journal; Educa. R., Educational Review; J. of Educa. Psychol., Journal of Educational Psychology; Man. Train. M., Manual Training Magazine; Pedagog. Sem., Pedagogical Seminary; Pop. Sci. Mo., Popular Science Monthly; Psychol. Clinic, Psychological Clinic; Relig. Educa., Religious Education; R. of Rs., Review of Reviews; School R., School Review.

Jenks, Jeremiah W. University influence on civic life. Relig. Educa. 9:515–19. (D. '14.)

Judd, Charles Hubbard. The junior high school. School R. 23:25–33. (Ja. '15.)

Kayfetz, Isidore. A critical study of the Hillegas composition scale. Pedagog. Sem. 21:559–77. (D. '14.)

Kelley, Truman Lee. Comparable measures. J. of Educa. Psychol. 5:589–95 (D. '14.)

Kitson, H. D. Suggestions toward a tenable theory of vocational guidance. Man. Train. M. 16:265–70. (Ja. '15.)

Lanier, Henry Wysham. The educational future of the moving picture. R. of Rs. 50:725–29. (D. '14.)

Latham, Harris L. A study of falsehood. Pedagog. Sem. 21:504–22. (D. '14.)

Lewitin, Marie. The first Russian teachers' congress. Pedagog. Sem. 21: 615–18. (D. '14.)

Lull, Herbert G. The relation of vocational to academic instruction. Man. Train. M. 16:201–7. (D. '14.)

Otis, Margaret. A study in the borderland of morality. Psychol. Clinic 8:201–7. (D. '14.)

Peterson, Harvey A. The generalizing ability of children. J. of Educa. Psychol. 5:561–70. (D. '14.)

Phillips, Byron A. The Binet tests applied to colored children. Psychol. Clinic 8:190–96. (D. '14.)

Pintner, Rudolph. One hundred juvenile delinquents tested by the Binet scale. Pedagog. Sem. 21:523–31. (D. '14.)

Pintner, Rudolf, and Patterson, Donald G. Experience and the Binet-Simon tests. Psychol. Clinic 8:197–200. (D. '14.)

Reuben, Milton Harold. An undergraduate's view of college education. Educa. R. 49:48–55. (Ja. '15.)

Rice, Melvin. The practical operation of school lunchrooms. Am. School Bd. J. 49:17–18. (D. '14.)

Russell, William F. Economy of time in secondary education. Educa. R. 49:20–36. (Ja.' 15.)

Scott, Fred Newton. Efficiency for efficiency's sake. School R. 23:34–42. (Ja. '15.)

Thorndike, Edward L. Measurement of ability to solve arithmetical problems. Pedagog. Sem. 21:495–503. (D. '14.)

Thorndike, Edward L. The significance of the Binet mental ages. Psychol. Clinic 8:185–89. (D. '14.)

Witham, Ernest C. School measurement. J. of Educa. Psychol. 5:571–88. (D. '14.)